

**UNITED STATES DEPARTMENT OF THE INTERIOR
BLM, LOWER SNAKE RIVER DISTRICT**

EA #ID096-03002 Title Page

Applicant (if any): BLM Action		Proposed Action: Grazing Permit Renewals for Indian Meadows Area Allotments			EA No. ID-096-03002
State: Idaho	County: Owyhee	District: Lower Snake River	Field Office: Owyhee	Authority: NEPA, FLPMA & Taylor Grazing Act	
Prepared By : OFO ID Team		Title: Various			Report Date: 2/28/2003

LANDS INVOLVED

Meridian	Township	Range	Section(s)	Acres
Boise	7 & 8 South	4 & 5 West	Various - See Maps	33,427

UNITED STATES DEPARTMENT OF THE INTERIOR
BLM, LOWER SNAKE RIVER DISTRICT

Environmental Assessment No. ID-096-03002 Face Sheet

<u>Consideration of Critical Elements</u>	<u>N/A or Not Present</u>	<u>Applicable or Present, No Impact</u>	<u>Discussed in EA</u>
Air Quality.....	___	___	<u>X</u>
Areas of Critical Environmental Concern.....	<u>X</u>	___	___
Cultural Resources.....	___	___	<u>X</u>
Environmental Justice (E.O. 12898).....	<u>X</u>	___	___
Farm Lands (Prime or Unique).....	<u>X</u>	___	___
Floodplain.....	___	___	<u>X</u>
Native American Religious Concerns.....	<u>X</u>	___	___
Noxious Weeds, Invasive Species.....	___	___	<u>X</u>
Hazardous Substances or Solid Wastes.....	<u>X</u>	___	___
Special Status Species (T&E).....	___	___	<u>X</u>
Social and Economic.....	___	___	<u>X</u>
Water Quality.....	___	___	<u>X</u>
Wetlands/Riparian Zones.....	___	___	<u>X</u>
Wild and Scenic Rivers (Eligible).....	___	___	<u>X</u>
Wilderness Study Areas.....	___	___	<u>X</u>
Wild Horse Herd Management Areas.....	<u>X</u>	___	___

BLM Staff Input/Review

<u>Name</u>	<u>Title/Specialty</u>
Valerie Geertson.....	Botanist/ACEC
Steve Jirik.....	Fire/Fuels Specialist
Kathi Kershaw.....	Ecologist
Mike Mathis.....	Wildlife Management Biologist
Lois Palmgren.....	Cultural Resources
Paul Seronko.....	Environmental Protection Specialist/
Jake Vialpando.....	Team Lead/Rangeland Management Specialist
Pam Druliner.....	Fisheries Biologist/Riparian
Judi Zuckert.....	Outdoor Recreation Planner/Visual/WSA

ID-01-1791-4 (October 1999)

Grazing Permit Renewals for the Indian Meadows Area Allotments

Indian Creek, Indian Meadows, Stone, Howl Creek, Johnstone, & Staples

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Grazing Permit Renewals Indian Meadows Core Area Allotments

1. INTRODUCTION

1.1 Purpose and Need for the Proposed Action

The purpose of the proposed action is to authorize livestock grazing and related management facilities on public lands in accordance with applicable laws and regulations. The proposed action is needed to improve resource conditions in the following allotments: Indian Meadows (#0520), Staples (#0610), Johnstone (#0618), Indian Creek (#0649), Stone (#0650), and Howl Creek (#0655). The purpose of this environmental assessment (EA) is to analyze the impacts of the proposed livestock grazing management practices and projects. Also, this EA will help the Bureau of Land Management authorized officer formulate informed grazing management decisions that are in conformance with the land use plan objectives, in compliance with Idaho Standards for Rangeland Health, and consistent with the Guidelines for Livestock Grazing Management.

1.2 Conformance with the Land Use Plan

The Owyhee Resource Management Plan (ORMP) was approved on December 30, 1999. It is the land use plan that guides public land management, including the grazing management program, in the area where the subject allotments are located. The proposed action is in conformance with the ORMP, as required by 43 CFR 1610.5-3(a). Specifically, the proposed action is designed to achieve Objective LVST 1 (identified on page 23 of the ORMP), which is to provide for a sustained level of livestock use compatible with meeting other resource objectives. In addition, the proposed action is in conformance with other ORMP objectives for soils, water, vegetation, riparian/wetland, fisheries, special status species, recreation, visual resources, cultural resources, and Wilderness Study Areas.

This EA is tiered to the 1999 RMP/EIS. Copies of the RMP/EIS are available at BLM's Lower Snake River District Office, and the document is also available for viewing and downloading on BLM's Idaho State Office Internet web site <http://www.id.blm.gov/>. The RMP/EIS broadly analyzes environmental issues relating to public land uses and resource allocations. Consistent with the provisions of 40 CFR 1502.20, the environmental analysis included in the RMP/EIS is incorporated here by reference, and this EA focuses on the environmental issues specific to renewing livestock grazing permits for allotments found within the Indian Meadows Area.

1.3 Relationship to Statutes, Regulations, and Other Requirements

Standards and Guidelines

On August 12, 1997, the Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management were approved by the Secretary of the Interior. Subsequently, livestock management practices must be in conformance with the approved standards and guidelines. The Standard and Guideline Assessments and Determinations were completed on October 3, 2002.

Federal Court Order

On March 31, 1999, B. Lynn Winmill, Chief Judge, U.S. District Court, signed a Memorandum Decision and Order (Civil Case No. 97-0519-S-BLW) finding that BLM violated NEPA when 68 grazing permits were renewed in 1997. The decision did not impose a remedy to cure the NEPA violation. However, on February 29, 2000, Judge Winmill signed a Memorandum Decision and Order (Civil Case No. 97-0519-S-BLW) directing the BLM to complete the review of 68 grazing permits under the new Owyhee Resource Management Plan and Environmental Impact Statement (RMP/EIS) and the BLM's Standards and Guidelines. The highest priority allotments are to be completed by the end of 2003, and the remaining allotments by the end of 2006.

The BLM has completed Standards and Guidelines for the Indian Meadows area allotments. The BLM's Authorized Officer has determined that in the Indian Meadows area allotments, existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards for rangeland health and conform with the guidelines for grazing administration.

Interior Columbia Basin Ecosystem Management Project (ICBEMP) Findings and Subsequent Idaho BLM Strategy

The recently completed ICBEMP found that due to the exclusion of fire, unmanaged conifer encroachment is occurring throughout much of the Intermountain West and the Columbia Basin.

Specifically:

- Juniper is increasing on dry grasslands and cool shrublands, reducing herbaceous understory and biodiversity.
- Conifer encroachment has increased due to decreased fire frequency.
- Ladder and ground fuels have increased, resulting in high severity fires
- Aspen, western larch and western white pine have all decreased in distribution.

On April 2, 2002, the Idaho BLM State Director issued Instruction Memorandum No. ID-2002-031, which prioritizes fuels management, restoration, and vegetation treatment projects for the next 3 to 4 years, until various ongoing land use planning efforts have been completed. The priorities in this strategy are derived from scientific findings presented in the ICEBMP, the DOI/USDA Cohesive Strategy for Protecting People and Sustaining Resources, and other National Fire Plan directives.

The memorandum prioritizes management efforts to focus on sagebrush steppe, aspen, and dry forest biomes, because of their importance and risk of future losses. Priority plant communities were then identified within each of the three biomes. Lastly, protection and maintenance of intact communities was given higher priority than restoring degraded communities because maintenance is much more effective and cost effective than restoration.

The priorities are as follows:

1. Sagebrush Steppe Protection
 - a. Initial stages of juniper encroachment
 - b. Dry forest species encroachment
 - c. Thin “decadent” sagebrush stands
 - d. Minimize invasive species encroachment or expansion
2. Sagebrush Steppe Restoration
 - a. Convert juniper woodlands back to sagebrush steppe
 - b. Increase diversity in crested wheatgrass seeding monocultures
3. Aspen Protection
 - a. Protect and maintain healthy stands
 - b. Treat stands with initial stages of Douglas fir or juniper encroachment
4. Aspen Restoration
 - a. Restore declining aspen stands.
5. Dry Forest Protection
 - a. Protect and maintain healthy old-growth ponderosa pine
 - b. Control Douglas-fir encroachment in areas with old-growth characteristics
6. Dry Forest Restoration
 - a. Restore dead and dying Douglas-fir stands
 - b. Convert climax types to early successional species like Aspen or mountain shrub

1.4 Grazing Allotment and Permit Background

For this environmental assessment, Indian Creek, Indian Meadows, Stone, Howl Creek, Johnstone and Staples allotments are combined into one document (Maps 1 and 2). This area as a whole will be referred to as the Indian Meadows Area.

Generally, these allotments are located in Owyhee County, Idaho, approximately 30 miles southeast of Jordan Valley, Oregon (Map 1). Elevation ranges from 5,000-8,000 feet. The major landforms associated with this allotment are steep canyons, numerous perennial and ephemeral drainages, and steep side-slopes and foothills. Perennial creeks included on public lands within these allotments include: Bogus Creek, Williams Creek, Coyote Creek, Mill Creek, South Fork Boulder Creek, Current Creek, Noon Creek, Indian Creek, and the North Fork of Owyhee River. The Staples Allotment is located in Owyhee County, Idaho, 12 miles southeast of Jordan Valley, Oregon (Map 2). This allotment is located between Jordan and Stonehouse Creeks, and is on the northern edge of Pleasant Valley, ID. The elevation is approximately 4,700 feet. The major landforms in this allotment are steep west facing side slopes leading up to tablelands. No creeks flow on federal lands within this allotment.

The table below describes permitted use for livestock grazing by allotment.

Table 1. Current Permitted use for livestock grazing (AUMs)

Allotment	Permittee	Permitted AUMs	Suspended AUMs	Active AUMs	Exchange of Use	Total AUMs	% BLM AUMs
Indian Creek	Robert Bruce	45	0	45	523	568	8
Indian Meadows	Robert Bruce	271	0	271	604	875	31
	Alan Johnstone	370	0	370	556	926	40
	Robert Mackenzie	93	0	93	264	357	26
Stone	Alan Johnstone	59	0	59	0	59	100
Howl Cr	Robert Mackenzie	12	0	12	0	12	100
Johnstone	Alan Johnstone	52	0	52	0	52	100
Staples	Robert Bruce	33	0	33	0	33	100

1.4.1. Indian Creek (0649)

The Indian Creek Allotment was created in 1982 by separating 5,181 acres of BLM, State, and private lands from the Indian Meadows Allotment (0520). Additionally, 198 AUMs were transferred from Indian Meadows allotment to the Indian Creek Allotment (Table 1). The allotment was originally proposed to be split into 2 separate pastures to be managed in a deferred grazing rotation with spring grazing beginning June 1 and fall grazing ending no later than October 31. However, the allotment division fence was never constructed. In 1988, the BLM District Manager's Final Decision dated March 24, 1988, decreased the total preference from 198 AUMs to 45 AUMs in direct correlation with the amount of BLM acres exchanged to the Idaho Department of Lands. Between 1987 and 1993, the allotment was grazed in a deferred grazing rotation with June-July grazing occurring in the northern portion, and August-October grazing occurring in southern portion. Permittees were required to use herding and natural barriers to keep livestock in the authorized area each year. However, since 1994, the allotment has been authorized as one pasture to be grazed June 1 through October 31 annually.

Actual Use

Actual use between 1988 and 2000 ranged from 24 AUMs to 61 AUMs. According to actual use reports, livestock grazing has been continuous since 1988, without a season of rest. This allotment, with only 595 acres of federal land, is billed as 8% public land. Season of use in this allotment generally occurs from June 1 through October 31.

1.4.2. Indian Meadows (0520)

In 1982, a two-pasture deferred-rotation grazing system, with spring grazing beginning June 1 and fall grazing ending no later than October 31, was implemented in Indian Meadows Allotment. At this time, four permittees were authorized in this allotment: Robert Bruce with 275 AUMs; Brown Baldwin Estates with 193 AUMs; Alan Johnstone with 476 AUMs; and

Robert Mackenzie with 120 AUMs of exchange of use (Table 1). In 1986, Brown Baldwin Estate transferred its 193 AUMs of grazing preference to Juniper Livestock Company, Inc., which in turn transferred the same AUMs to Robert Bruce, thus adjusting Robert Bruce's total preference from 275 to 468 AUMs. In 1987, phase 1 of the South Mountain State Land Exchange decreased the federal lands in the Indian Meadows Allotment by 1898.83 acres. Total AUMs by grazing permittee were adjusted downward to reflect the loss in federal lands as follows: Robert Bruce from 468 to 271 AUMs; Alan Johnstone from 476 to 370 AUMs; and Robert Mackenzie from 120 to 93 AUMs.

In 1995, BLM and the Idaho Department of Lands began working together to develop a grazing management plan in Indian Meadows, which would improve resource conditions on State and federal lands. The State developed a number of different alternatives. Of the alternatives presented to the BLM at the time, one incorporating a three or four pasture deferred rest-rotation grazing system was preferred by BLM. It incorporated four pastures in which summer grazing (after July 15) would occur one out of every four years. This grazing system required construction of three new fences. However, this system was not adopted or implemented. In 1996, the Department of Lands completed a comprehensive Indian Meadows Allotment Situation Summary Report (evaluation). In the report, the State identified that the allotment currently was grazed for a continuous four to five month grazing period. Alan Johnstone and Robert Mackenzie turned livestock out into the northern end of the allotment, and Robert Bruce turned livestock out in the southern end annually. Turnout generally occurred on June 1 and livestock were removed sometime in October.

In February of 1996, the State drafted an agreement to implement a 3-pasture rest rotation grazing system. At a February 22, 1996 meeting including the BLM, State, and all permittees, it was agreed upon to divide the allotment into two separate grazing systems. Alan Johnstone and Robert Mackenzie would be in the west end of the allotment, and Robert Bruce would be in the east end. The division fence between pastures 1 and 3 (completely on State lands) was completed in 1997. The Wilderness Study Area (WSA) division fence between pastures 2 and 3, which is located outside of the WSA, was completed in 1998. The agreement did not create separate allotments, but designated use areas. Alan Johnstone and Robert Mackenzie were authorized to graze cattle in pasture 1, and Robert Bruce was authorized to graze cattle in pastures 2 and 3.

Actual Use

Pasture 1

Actual use between 1986 and 1997 ranged from 254 AUMs to 745 AUMs. When the allotment was fenced into three pastures in 1998, actual use in pasture 1 between 1998 and 2000 ranged from 308 AUMs to 420 AUMs. According to actual use reports, livestock grazing has been continuous since 1986, without a season of rest. Generally, season of use in pasture 1 ranged from June 1 through October 31.

Pastures 2 and 3

During this same period of time (1998-2000), actual use in pastures 2 and 3 ranged from 218 AUMs to 241 AUMs. According to actual use reports, livestock grazing has been continuous

since 1986, without a season of rest. Season of use in pastures 2 and 3 generally occurs from June 1 through October 31. However, in 1999 approximately 10 head of cattle remained in pasture 2 until December 6.

1.4.3. Stone (0650)

In 1982, Alan Johnstone's Indian Meadows active preference of 537 AUMs was reduced to 476 AUMs, transferring those 61 AUMs to a separately fenced portion of the Indian Meadows allotment, and designated as Stone allotment. A deferred grazing rotation, with spring use beginning June 1 and fall use ending not later than October 31, was prescribed. For example, in year one, the allotment would be grazed June 1 through August 10, in year two the allotment would be grazed August 10 through October 31; and in year three, the cycle would repeat. The livestock numbers varied at the permittees discretion as long as the total use did not exceed the active preference. For the most part, the grazing rotation has been followed with the exception of 1994, 1996, and 1998-2001, when the allotment was completely rested.

Actual Use

Actual use between 1989 and 2001 ranged from 0 to 67 AUMs. According to actual use reports, the permittee has taken non-use since 1996. Generally, season of use in this allotment ranged from August 1 though October 7.

1.4.4. Howl Creek (0655)

In 1983, pasture 2 of the Old Man Allotment was licensed as a fenced federal range and was named the Howl Creek Allotment. The grazing preference in the Old Man Allotment was adjusted from 127 to 115 AUMs, transferring 12 AUMs to the Howl Creek. The period of use was designated to be at the grazing permittee's discretion. Season of use greatly varied from year to year. For example, in 1991, the season of use included grazing from January 1 to April 1 and from May 1 to June 15; in 1990, grazing occurred from May 15 to June 15 and from October 15 to December 15; and in 1989, grazing occurred from May 15 to August 31.

Actual Use

Actual use between 1990 and 1991 ranged from 34 AUMs to 49 AUMs. No actual use reports have been submitted since 1991. Annual grazing bills indicate that since 1992 Robert Mackenzie has activated the 12 AUMs permitted in this allotment. Generally, season of use in this allotment ranged from May 1 through June 15, and October 1 through December 15, with horses and cattle. Occasionally, the allotment was grazed from January 1 through March 31.

1.4.5. Johnstone (0618)

In 1987, the grazing preference and pasture boundaries of the Johnstone allotment were established. The active grazing preference in the Johnstone allotment was established at 52 AUMs. The period of use was designated to be at the grazing permittee's discretion. Season of use generally occurred in the fall, during September, October, or November.

Actual Use

In pasture 2, actual use between 1989 and 1991 ranged from 53 AUMs to 55 AUMs. No actual use reports have been submitted since 1991. Annual grazing bills indicate that since 1992 Alan Johnstone has activated the 52 AUMs permitted in this pasture. Season of use in this pasture generally ranged from September 15 through October 15 although occasionally the allotment was grazed from October 15 through November 15.

1.4.6. Staples (0610)

In 1987, the grazing preference and pasture boundaries of the Staples allotment were established. The Staples allotment consists of 139 acres of private land and 176 acres of federal land (approximately 56% of allotment). The active grazing preference in the Staples allotment was established at 33 AUMs. The period of use was designated to be at the grazing permittee's discretion. A combination of horses and cattle, have been authorized to graze with seasons of use varying between February 1 and September 30.

Actual Use

Actual use between 1989 and 2001 ranged from 10 AUMs to 40 AUMs. Generally, season of use in this allotment ranged from April 1 through August 15 although occasionally the allotment was grazed from February 1 through September 30. Authorized use included horses from 1989 to 1998, and cattle from 1999 to 2001.

2. PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

Permitted Use:

Grazing permits would be renewed for a term of ten years and would expire on February 28, 2013. The following permitted use would apply to each term grazing permit:

Table 2 Op #1430 Robert Bruce

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Creek						
Pasture 1-Mill Cr	2 Cattle	7/16	10/31	100	0	7
Pasture 2-Bogus Cr	42 Cattle	6/1	7/15	61	0	38

Table 3 Op #1470 Robert Bruce

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	174 Cattle	6/1	10/31	31*	0	271
Staples	32 Cattle	12/1	12/31	100	0	33

Table 4 Op #1431 Robert Mackenzie

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	71 Cattle	6/1	10/31	26*	0	93
Howl Creek	12 Cattle	12/1	12/31	100	0	12

Table 5 Op #1422 – Alan Johnstone

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	184 Cattle	6/1	10/31	40*	0	370
Stone	20 Cattle	8/1	10/31	100	0	59
Johnstone	51 Cattle	12/1	12/31	100	0	52

**Percent public land (%PL) as shown, with the exception of Pasture 5 – Noon Creek, which will be authorized as 95 %PL for all permittees.*

Terms and Conditions:

The following general grazing terms and conditions would apply to each renewed grazing permit:

1. Livestock turnout dates are subject to Lower Snake River District Range Readiness Criteria.
2. You are required to properly complete, sign and date an Actual Grazing Use Report Form, (BLM Form 4130-5) for each allotment, the completed form(s) must be submitted to this office within 15 days from the last day of your authorized annual grazing use.
3. Supplemental feeding is limited to salt, mineral, and/or protein in block, granular, or liquid form. If used, these supplements must be placed at least one-quarter (1/4) mile away from any riparian area, spring, stream, meadow, aspen stand, sensitive plant species, playa, or water development.
4. Pursuant to 43 CFR 10.4(b), you must notify the BLM Field Manager, by telephone with written confirmation, immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2) on federal lands. Pursuant to 43 CFR 10.4(c), you must immediately stop any ongoing activities connected with such discovery and make a reasonable effort to protect the discovered remains or objects.
5. All maintenance of range developments within a wilderness study area requires prior approval from the authorized officer.

Grazing Management

2.1.1. Indian Creek (0649)

The following grazing schedule would be implemented beginning in grazing year 2003 as outlined in the following table.

Table 6 Indian Creek Allotment grazing rotation

Pasture No. & Name*	AUMs**	Year 1	Years 2-5	Years 6-10[^]
1- Mill Cr	7	6/1-8/31	7/16-10/31	7/16-10/31
2- Bogus Cr	38		6/1-7/15	6/1-7/15

* See Map1 for Pastures.

**BLM AUMs.

[^]Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.

Livestock numbers could vary as long as total AUMs were not exceeded annually. Generally, flexibility in move dates would be authorized in moving between pastures, beginning five days before but not to exceed two days following the scheduled move date, with 90% of the herd moved by the scheduled move date.

Short Term Objectives:

Listed below are objectives that would need to be obtained annually, in order to make progress toward meeting objectives stated in the Owyhee Land Use Plan and to meet Rangeland Health Standards as discussed in the Indian Meadows Area assessment and determination documents.

1. Upland utilization during the growing season would not exceed 40% of current years growth on perennial grasses.
2. A minimum of 4 inches of median stubble height would remain on key hydric herbaceous species such as Nebraska sedge and beaked sedge at the end of the grazing season along Bogus Creek as measured at key areas shown on the Monitoring Location Map 8.
3. Browsing of woody species in riparian areas along Bogus Creek would be limited to an incidence of use not to exceed 25% on young woody plants less than 3 feet in height as measured at key areas shown on the Monitoring Location Map 8.
4. Streambank alteration attributable to livestock grazing (pugging, shearing, trails, trampling), would be less than 10% as measured at the key areas shown on the Monitoring Location Map 8.
5. Browse during the grazing period would not exceed 50% on bitterbrush.

Monitoring

Monitoring would occur at key areas (See Monitoring Locations on Map 7) within the allotment. In the 2nd and 5th years, upland utilization studies (including bitterbrush browse) would be completed at predetermined key use area(s). In addition, stubble height, bank alteration, and woody browse would be measured on Bogus Creek during these same years. Nested Plot Frequency Transects (NPFT) would be established (see Map 7 for potential locations) and recorded in the 1st year and again in the 5th year. Other riparian and stream monitoring would occur in accordance with Appendix 2: Water Quality Restoration Plan. If short-term objectives

were not being achieved by the 5th year, BLM would make appropriate changes in AUMs and/or length in season of use.

Rangeland Management Projects:

Bogus Creek Pasture Fence: This division fence would be necessary to implement this alternative. Approximately one and one-half miles of barbed, 3-wire permanent fence would be constructed (to BLM specifications) to create a separate pasture at the north end of the allotment (Map 1). Fence materials would be provided by BLM for the fence on federal lands. The remainder of the fence would be the responsibility of the grazing permittee and Idaho State Lands. Construction and maintenance would be the responsibility of the permittee. This project would be completed in the first year of implementation of the grazing system.

Interim Management:

During year 1 of implementation, grazing would be authorized as indicated in Table 6. The Bogus Creek pasture fence would be required before livestock grazing on BLM lands would be authorized in year 2.

2.1.2. Indian Meadows (0520)

The grazing rotation for Indian Meadows allotment would be implemented beginning in the spring 2003, as illustrated in Table 7.

Table 7 Indian Meadows grazing rotation:

Pasture No. & Name ¹	AUMs ²	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6-10 ³
1-Williams Cr	200	6/1-7/15	8/26-10/15	6/1-6/15	6/1-7/15	8/31-9/12	Repeat rotation with year 1
2- Mills Cr	500	9/20-10/15	8/27-10/10	6/16-7/16	9/13-10/13	6/1-6/30	
3- Boulder Cr	450	8/16-9/19	7/6-8/25	7/17-8/12	8/16-9/12	7/1-7/28	
4- State	550	7/11-8/15	6/1-7/5	8/13-9/15	7/13-8/15	7/29-8/30	
5- Noon Cr	535	6/1-7/10	7/30-8/26	Rest	6/1-7/12	9/13-10/24	

1- See Map 1 for Pastures.

2- BLM AUMs equate to approximately 735, allocated throughout pastures 1, 2, 3, and 5. The remaining AUMs are authorized and controlled by the Idaho Department of State Lands.

3- Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.

Livestock numbers could vary as long as total AUMs in each pasture were not exceeded annually. Generally, flexibility in move dates would be authorized in moving between pastures beginning five days before, but not to exceed two days following, the scheduled move date, with 90% of the herd moved by the scheduled move date.

Short Term Objectives:

Listed below are objectives that would need to be obtained annually, in order to make progress toward meeting objectives stated in the Owyhee Land Use Plan and to meet Rangeland Health Standards as discussed in the Indian Meadows Area assessment and determination documents.

1. Upland utilization during the growing season would not exceed 50% of current years growth on perennial grasses.
2. Browse during the grazing season would not exceed 50% on bitterbrush and mountain mahogany.
3. A minimum of 4 inches of median stubble height would remain on key hydric herbaceous species such as Nebraska sedge and beaked sedge at the end of the grazing season along Noon Creek, Noon Creek Tributary, North Fork Owyhee River, Williams Creek, Mill Creek, and Current Creek as measured at key areas shown on the Monitoring Location Map 8.
4. Browsing of woody species in riparian areas along Noon Creek, Noon Creek Tributary, North Fork Owyhee River, Williams Creek, Mill Creek, and Current Creek would be limited to an incidence of use not to exceed 25% on young woody plants less than 3 feet in height as measured at key areas shown on the Monitoring Location Map 8.
5. Streambank alteration attributable to livestock grazing (pugging, shearing, trails, trampling), would be less than 10% as measured at the key areas shown on the Monitoring Location Map 8.

Monitoring

Monitoring would occur at key areas (See Monitoring Location on Map 7) within the allotment. In years 2 and 5, upland utilization studies (including bitterbrush browse) would be completed at predetermined key use area(s) in pastures 1 and 5. Nested Plot Frequency Transects (NPFT) would be established (see Map 7 for potential locations) and recorded in year 1, and again in year 5. Stubble height, woody browse, and bank alteration would be measured on Noon Creek, North Fork Owyhee River, and Current Creek in pasture 5 and Williams Creek in pasture 1 in years 2 and 4 and on Mill Creek in pasture 2 in years 2 and 3. Other riparian and stream monitoring would occur in accordance with Appendix 2: Water Quality Restoration Plan. If short-term objectives were not being achieved by year 5, BLM would make appropriate changes in AUMs and/or length in season of use.

Rangeland Management Projects:

Pasture 1 and 2 Division Fence: This division fence would be necessary to implement this alternative. Approximately 3.5 miles of new barbed 3-wire permanent fence would be constructed (to BLM specifications) to divide this area into 2 pastures (Map 1). Approximately 0.75 miles of fence would be located on public land. This portion of the fence materials would be provided by the BLM. Construction and maintenance would be the responsibility of the grazing permittees. Due to the remainder of the fence being located on Idaho State Lands, this portion would need to be funded and constructed by the permittees in cooperation with Idaho State Lands. This project would need to be completed in year 1 of implementation of the grazing system.

Pasture 2 and 3 Division Fence: This division fence would be necessary to implement this alternative. Approximately 4.0-miles of new barbed 3-wire permanent fence would be constructed (to BLM specifications) to divide this area into 2 pastures (Map 1). Approximately 0.5 miles of fence would be located on public land. This portion of the fence materials would be provided by the BLM. Construction and maintenance would be the responsibility of the grazing permittees. Due to the remainder of the fence being located on Idaho State Lands, this portion would need to be funded and constructed by the permittees in cooperation with Idaho State Lands. This project would need to be completed in year 2 of implementation of the grazing system.

Adjust Current Creek Fences: This project would include removing approximately 2 miles of existing fence and constructing 2 miles of new barbed 3-wire fence, creating the Current Creek Pasture (Map 1). The new fence may be a take-down fence to reduce annual maintenance. This project is and would continue to be located within the WSA. Rest would be required in this pasture until the portion of Current Creek within the fenced area is in proper functioning condition (PFC). Once PFC is achieved, seven days of livestock grazing at 30 AUMs would be authorized annually. This project would be completed in year 2 of implementation of livestock grazing. The project would be funded and completed by the BLM, and maintenance would be the responsibility of the grazing permittees. Annual grazing would not occur in pasture 5 until fences were maintained or set up (if the fence is a take down fence).

Reconstruction of Noon Creek Pasture Fences: Currently, 20% or more of the pasture (Map 1) has ineffective boundary fences to control livestock grazing. Approximately 5 miles of fence would be reconstructed along the eastern and southern boundaries of pasture 5. Fence reconstruction and maintenance would be the responsibility of the grazing permittees in accordance with Cooperative Agreements on record. Fence materials would be provided by the BLM. Fence reconstruction would be required in year 1 of implementation. Prior to authorizing livestock grazing in year 2, pasture 5 (Noon Creek) reconstruction must be completed to BLM specifications. No off road vehicle use or vegetative removal (pruning of shrubs being the exception) would be allowed within the WSA.

Wet Meadow Exclosure to Protect Least Phacelia: A permanent barbed 3-wire exclosure approximately 1.0 miles in length would be constructed to protect an existing least phacelia plant population (Map 1). The exclosure would be funded and constructed by the BLM, and maintenance would be the responsibility of the grazing permittees. This project would be completed during year 2 of implementation of grazing livestock.

Juniper Management to Improve Upland Habitat: BLM, in cooperation with the Idaho Department of Lands (IDL), would conduct a prescribed fire on approximately 6,186 acres of public lands, sometime before 2013. See Appendix I for the prescribed burn plan and Map 3 for burn locations. This project would reintroduce the natural role of fire on public, state, and private lands in the allotment. Working cooperatively with IDL on this allotment would minimize the use of surface disturbing equipment by establishing fire lines based on topography, other natural features, and existing roads instead of along artificial ownership boundaries. These cooperative efforts would aid in keeping this project cost effective.

Project Objectives

1. Maintain aspen, mountain shrub, mountain big sagebrush/bitterbrush-bunchgrass communities and low sagebrush/bunchgrass communities by controlling juniper with prescribed fire on approximately 60% of the 4,744 acres within pasture 5 (Noon Creek).
2. Improve herbaceous components within mountain big sagebrush/mountain shrub/juniper dominated communities with prescribed fire on approximately 50% of the 1,442 acres of BLM lands within the pasture 1 (Williams Creek).
3. Maintain watershed function, stability, and reduce accelerated erosion by maintaining and increasing shrub and diverse herbaceous plant communities, which provide cover and litter needed to protect the soil.
4. Restore suitability of mountain big sagebrush/bitterbrush-bunchgrass communities as sage grouse nesting habitat.
5. Improve wildlife habitat for sage grouse, elk, mule deer, antelope, migratory birds, small mammals, amphibians, and reptiles by creating and maintaining vegetative mosaics. These seral stages would maintain various habitats to meet the forage and cover requirements for these species.

The following requirements would apply on BLM land:

1. Prescribed fire would only be completed in accordance with Standard Operating Procedures (Appendix I).
2. After the minimum two growing season rest, livestock grazing could resume after vegetation establishment objectives were achieved (Appendix I).
3. No temporary fences would be authorized within the WSA during the pre or post fire rest periods.
4. No vehicle traffic or mechanical disturbance would occur within the WSA in conjunction with the prescribed burn planning or execution.

Interim Management:

During year 1 of implementation, grazing would be authorized as indicated in the Table 7. Permittees would be required to herd and make a good faith effort to keep livestock in the scheduled pasture prior to construction of the fence creating the Williams Creek and Mill Creek pastures. Prior to authorizing livestock grazing in year 2, the Pasture 1 and 2 Division fence and the Noon Creek boundary fences, must be completed to BLM specifications. If these fences were not completed, livestock grazing would not be authorized on public lands in the Williams Creek and Noon Creek pastures. When fences have been completed to BLM specifications, livestock grazing would be authorized for the remainder of that pastures prescribed use period that year.

2.1.3. Stone (0650)

The following grazing schedule would be implemented beginning in spring 2003:

Pasture No. & Name	AUMs	Season of Use*
Stone - 1	59	8/1 – 10/31

**Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.*

Short Term Objectives:

Listed below are objectives that would need to be obtained annually, in order to make progress toward meeting objectives stated in the Owyhee Land Use Plan and to meet Rangeland Health Standards as discussed in the Indian Meadows Area assessment and determination documents.

1. Upland utilization during the growing season would not exceed 50% of current years growth on perennial grasses.
2. Browse during the grazing season would not exceed 50% on bitterbrush and mountain mahogany.
3. A minimum of 4 inches of median stubble height would remain on key hydric herbaceous species such as Nebraska sedge and beaked sedge at the end of the grazing season along South Fork Boulder Creek as measured at key areas shown on the Monitoring Location Map 8.
4. Browsing of woody species in riparian areas along South Fork Boulder Creek would be limited to an incidence of use not to exceed 25% on young woody plants less than 3 feet in height as measured at key areas shown on the Monitoring Location Map 8.
5. Streambank alteration attributable to livestock grazing (pugging, shearing, trails, trampling), would be less than 10% as measured at the key areas shown on the Monitoring Location Map 8.

Monitoring

Monitoring would occur at key areas (See Monitoring Locations on Map 7) within the allotment. Upland utilization studies (including bitterbrush browse) would be completed at predetermined key use area(s) in years 2 and 5. Nested Plot Frequency Transects (NPFT) would be established (see Map 7 for potential locations) and recorded in year 1, and re-read in year 5. Other riparian and stream monitoring would occur in accordance with Appendix 2: Water Quality Restoration Plan. If short-term objectives were not being achieved by year 5, BLM would make appropriate changes in AUMs and/or length in season of use.

2.1.4. Johnstone (0618)

Under this alternative, cattle would be grazed at the discretion of the permittee any time during the grazing year and livestock numbers could vary. Generally, grazing would occur from September through November and the allotment grazing system would be as follows:

Pasture	Year: 2003-2013*
1-Johnstone	9/1 - 11/30

**Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.*

Short Term Objectives:

Listed below are objectives that would need to be obtained annually, in order to ensure progress toward meeting objectives stated in the Owyhee Land Use Plan and to meet Rangeland Health Standards as discussed in the Indian Meadows Area assessment and determination documents.

1. Upland utilization during the growing season would not exceed 50% of current years growth on perennial grasses.
2. Browse during the grazing season would not exceed 50% on bitterbrush and mountain mahogany.
3. A minimum of 4 inches of median stubble height would remain on key hydric herbaceous species such as Nebraska sedge and beaked sedge at the end of the grazing season along Coyote Creek as measured at key areas shown on the Monitoring Location Map 8.
4. Browsing of woody species in riparian areas along Coyote Creek would be limited to an incidence of use not to exceed 25% on young woody plants less than 3 feet in height as measured at key areas shown on the Monitoring Location Map 8.
5. Streambank alteration attributable to livestock grazing (pugging, shearing, trails, trampling), would be less than 10% as measured at the key areas shown on the Monitoring Location Map 8.

Monitoring

Monitoring would occur at key areas (See Monitoring Location on Map 7) within the allotment. In years 2 and 5, upland utilization studies (including bitterbrush browse) would be completed at predetermined key use area(s). Nested Plot Frequency Transects (NPFT) would be established (see Map 7 for potential locations) and recorded in year 1, and again in year 5. Other riparian and stream monitoring would occur in accordance with Appendix 2: Water Quality Restoration Plan. If short-term objectives were not being achieved by year 5, BLM would make appropriate changes in AUMs and/or length in season of use.

2.1.5. Howl Creek (0655)

Under this alternative, cattle would be grazed at the discretion of the permittee any time during the grazing year and livestock numbers could vary. Generally, grazing would occur from May through December and the allotment grazing system would be as follows:

Pasture	Year: 2003-2013
1-Howl Creek	5/1 - 12/31

**Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.*

Short Term Objectives

Listed below are objectives that would need to be obtained annually in the Howl Creek and Staples allotments. These objectives would need to be met in order to make progress toward meeting objectives stated in the Owyhee Land Use Plan and to meet Rangeland Health Standards as discussed in the Indian Meadows Area assessment and determination documents.

1. Upland utilization during the growing season would not exceed 50% of current years growth on perennial grasses.
2. Browse during the grazing season would not exceed 50% on bitterbrush, mountain mahogany.

2.1.6. Staples (0610)

Under this alternative, cattle would be grazed at the discretion of the permittee, any time during the grazing year. Livestock numbers could vary. Generally, grazing would occur from April through September and the allotment grazing system would be as follows:

Pasture	Year: 2003-2013
1-Staples	4/1 - 9/30

**Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.*

Short Term Objectives

Short Term Objectives are the same as those listed under Howl Creek Allotment.

Monitoring

Monitoring would occur at key areas (See Monitoring Location on Map 7) within the allotment. Upland utilization studies (including bitterbrush browse) would be completed at predetermined key use area(s) in years 2 and 5. Nested Plot Frequency Transects (NPFT) would be established (see Map 7 for potential locations) and recorded in year 1, and re-read in year 5. If short-term objectives were not being achieved by year 5, BLM would make appropriate AUMs and/or length in season of use changes.

2.2 Alternative 1 – Four-Pasture Rest Rotation and Prescribed Fire (Common Use)

Permitted Use:

Livestock grazing permits would be renewed for a term of ten-years, expiring on February 28, 2013. The following permitted use would apply to each term grazing permit:

Table 2.2-1 Op #1430 Robert Bruce

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Creek						
Pasture 2-Bogus Cr	42 C	6/1	7/15	61	0	38
Pasture 1-Mills Cr	2 C	7/16	10/31	100	0	7

Table 2.2-2 Op #1470 Robert Bruce

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	174 C	6/1	10/31	31*	0	271
Staples	32 C	12/1	12/31	100	0	33

Table 2.2-3 Op #1431 Robert Mackenzie

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	71 C	6/1	10/31	26*	0	93
Howl Creek	12 C	12/1	12/31	100	0	12

Table 2.2-4 Op #1422 – Alan Johnstone

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	184 C	6/1	10/31	40*	0	370
Stone	20 C	7/15	10/15	100	0	59
Johnstone	51 C	12/1	12/31	100	0	52

**Percent public land (%PL) as shown, with the exception of Pasture 5 – Noon Creek, which will be authorized as 95 %PL for all permittees.*

Terms and Conditions

The terms and conditions for this alternative would be the same as for the Proposed Action.

Grazing Management

2.2.1. Indian Creek (0649), Stone (0650), Howl Creek (0655), Johnstone (0618), and Staples (0610)

Under this alternative, grazing management for these allotments would be the same as the Proposed Action.

2.2.2. Indian Meadows (0520)

The following grazing rotation would be implemented beginning in spring 2003:

Pasture No. & Name	AUMs	Year 1	Year 2	Year 3	Year 4	Year 5-10 ²
1 – Lookout	550 ¹	Rest	8/22-10/15	6/1-7/15	9/1-10/15	Repeat with year 1
2 – Vulcan Creek	600 ¹	6/1-7/31	Rest	7/16-8/31	7/16-8/31	
3 – Indian Creek	550	8/1-9/24	6/1-7/31	9/1-10/15	Rest	
4 – Indian Meadows	535 ¹	9/25-10/31	8/1-8/21	Rest	6/1-7/15	

See Map 1 for Pastures.

1- Authorized BLM AUMs equate to 735 AUMs allocated in pastures 1, 2, and 4. The remaining AUMs are authorized and controlled by the Idaho Department of State Lands.

2- Continue grazing schedule unless monitoring in year 5 warrants grazing management changes.

Livestock numbers could vary as long as total AUMs in each pasture were not exceeded annually. Generally, flexibility in move dates would be authorized in moving between pastures, beginning five days before but not to exceed two days following, the scheduled move date with 90% of the herd moved by the scheduled move date.

Short Term Objectives:

The short-term objective of this alternative would be the same as for the Proposed Action.

Monitoring

In years 2 and 4, upland utilization studies (including bitterbrush browse) would be completed at predetermined key use area(s) in pastures 1 and 4. Stubble height, bank alteration and woody utilization would be measured on Noon Creek, North Fork Owyhee River, and Current Creek in pasture 4 and Mill and Williams Creeks in pasture 1 in years 2 and 4. Nested Plot Frequency Trend (NPFT) would be established (see Map 7 for potential locations) and recorded in year 1 and 4. Other riparian and stream monitoring would be in accordance with Appendix 2: Water Quality Restoration Plan. If short-term objectives were not being achieved by year 4, BLM would make appropriate changes in AUMs and /or length in season of use.

Rangeland Management Projects:

The rangeland management projects and prescribed fire for this alternative would be the same as for the Proposed Alternative, with the exception of the Pasture 2 and 3 Division fence.

Interim Management:

During year 1 of implementation, grazing would be authorized as indicated in the above table. Permittees would be required to herd and make a good faith effort to keep livestock in the Vulcan Creek area and to the south. Prior to authorizing livestock grazing in year 2, the Pasture 1 and 2 Division fence and the Pasture 4 Boundary fences, must be completed to BLM specifications. If these fences were not completed, livestock grazing would not be authorized on public lands in the Lookout Pasture area and likewise in Pasture 4–Indian Meadows. Once fences have been completed to BLM specifications, grazing would be authorized for the remainder of that pastures prescribed use period.

2.3 Alternative 2 – No Action, Present Situation

Under this alternative, current grazing practices and management would continue and no rangeland management projects would be constructed (Map 6). Dates listed below reflect the historic term permit grazing periods. Refer to Grazing Allotment and Permit Background for a description of traditional grazing periods, authorized by annual licenses.

Permitted Use:

Grazing permits would be renewed for a term of ten years, expiring on February 28, 2013. The following permitted use would apply to each term grazing permit:

Table 2.3-1 Operator # 1430 – Robert Bruce

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Creek	126 C	6/1	10/15	8	0	45
Total						45

Table 2.3-2 Operator #1470 – Robert Bruce

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	174 C	6/1	10/31	31	0	271
Staples	32 C	12/1	12/31	100	0	33
Total						304

Table 2.3-3: Operator #1431 – Robert Mackenzie

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	71 C	6/1	10/31	26	0	93
Old Man	115 C	4/16	5/15	100	0	113
Howl Creek	12 C	12/1	12/31	100	0	12
Total						218

Table C4: Operator #1422 – Alan Johnstone

Allotment	Livestock No. & Kind	Start Date	End Date	% PL	Suspended	Permitted AUMs
Indian Meadows	184C	6/1	10/31	40	0	370
Stone	13 C	6/1	10/15	100	0	59
Johnstone	51 C	12/1	12/31	100	0	52
Total						481

Terms and Conditions:

The following permit terms and conditions would apply to each renewed grazing permit:

1. Livestock grazing would be in accordance with the Owyhee Field Manager's Final Grazing Decision.
2. Turnout is subject to Boise District Range Readiness Criteria.
3. Your certified actual use report is due within 15 days of completing your authorized annual grazing use.
4. Salt and/or supplement shall not be placed within one quarter (1/4) mile of springs, streams, meadows, aspen stands, playas, or water developments.
5. Changes to the scheduled use require prior approval.
6. Trailing activities must be coordinated with the BLM prior to initiation. A trailing permit or similar authorization may be required prior to crossing public lands.
7. Livestock exclosures located within your grazing allotments are closed to all domestic grazing use.
8. Range improvements must be maintained in accordance with the cooperative agreements and range improvement permits in which you are a signator or assignee. All maintenance of range improvements within a wilderness study area requires prior consultation with the authorized officer.
9. All appropriate documentation regarding base property leases, lands offered for exchange-

of-use, and livestock control agreements must be notarized prior to submission and comply with Boise District Policy.

10. Failure to pay the grazing bill within 15 days of the due date specified shall result in a late fee assessment of \$25.00 or 10 percent of the grazing bill, whichever is greater, not to exceed \$250.00. Payment made later than 15 days after the due date shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR 4140.1 (B) (1) and shall result in action by the authorized officer under 43 CFR 4150.1 and 4160.1.
11. Livestock grazing would be in accordance with your allotment grazing schematic(s). Changes in scheduled pasture use dates would require prior authorization.
12. Utilization may not exceed 50% of the current year's growth.

As a result of the February 29, 2000 Memorandum Decision and Order by Judge B. Lynn Winmill, the following interim terms and conditions now apply:

1. Key herbaceous riparian vegetation, where streambank stability is dependent upon it, would have a minimum stubble height of 4 inches on the streambank, along the greenline after the growing season.
2. Key riparian browse vegetation would not be used more than 50% of the current annual twig growth that is within reach of the animals.
3. Key herbaceous riparian vegetation on riparian areas, other than the streambanks, would not be grazed more than 50% during the growing season, or 60% during the dormant season.
4. All the above listed pollutants, with the exception of flow modification, are the result of streambank damage and loss of streambank shade due to livestock grazing.
5. Streambank damage attributable to grazing livestock would be less than 10% on a stream segment.

Rangeland Management Projects:

No rangeland developments would be constructed. No prescribed fires would occur.

Grazing Management:

2.3.1. Indian Creek (0649)

Under this alternative, cattle would be authorized to graze from 6/1 through 10/15 annually. Livestock numbers could vary as long as total AUMs in the allotment were not exceeded annually.

2.3.2. Indian Meadows (0520)

Under this alternative, cattle would be authorized to graze from 6/1 through 10/31 annually. Robert Mackenzie and Alan Johnstone would continue to be authorized to graze in pasture 1; and Robert Bruce in pastures 2 and 3, at their current exchange of use levels. Robert Bruce would continue to be authorized to graze livestock in a deferred grazing rotation, using pasture 2 between 6/1-7/31 and pasture 3 between 8/1-10/31, annually. The allotment grazing system would be as follows:

Pasture	Year: 2003-2013
1	6/1 – 10/31
2	6/1 – 7/31
3	8/1 – 10/31

Livestock numbers could vary as long as total AUMs in the allotment were not exceeded annually. Annually authorized pasture dates would be flexible.

2.3.3. Stone (0650)

Under this alternative, cattle would be authorized to graze from 6/1 through 10/15 annually. Livestock numbers could vary as long as total AUMs in the allotment were not exceeded annually.

2.3.4. Howl Creek (0655)

Under this alternative, cattle would be grazed at the discretion of the permittee any time during the grazing year and livestock numbers could vary. Generally, grazing would occur from May through December.

2.3.5. Johnstone (0618)

Under this alternative, cattle would be grazed at the discretion of the permittee any time during the grazing year and livestock numbers could vary. Generally, grazing would occur from September through November.

2.3.6. Staples (0610)

Under this alternative, cattle would be grazed at the discretion of the permittee, any time during the grazing year. Livestock numbers could vary. Generally, grazing would occur from April through September.

2.4 Alternative 3 – No Grazing

Permitted Use:

The no grazing alternative equates to not permitting grazing on the following allotments: Indian Creek (0649), Indian Meadows (0520), Stone (0650), Howl Creek (0655), Johnstone (0618), and Staples (0610). No livestock would be authorized to graze on 82,795 acres of public land in the South Mountain Core Area.

Grazing Management:

No livestock grazing would be permitted on public land under this alternative. No prescribed fires would occur.

2.5 Other Alternatives Considered

Juniper management alternatives to the proposed action, considered to prevent juniper expansion

in the project area, were dismissed or not analyzed in detail because they would not address the purpose and need for action, or would otherwise be ineffective.

Hand cutting and other mechanical treatments were considered for controlling juniper. These alternatives were dismissed and not analyzed in detail because they would be cost prohibitive and too labor intensive to be efficient or effective, considering the large amount of juniper expansion currently in the area.

3. AFFECTED ENVIRONMENT

The majority of acres in this allotment complex are private or State lands. Although BLM has no specific information on State and private lands, plant communities are thought to be similar to public lands. Upland health and riparian conditions on State and private lands are unknown.

3.1 Upland Vegetation

The upland elevations in the Indian Meadows area range from 4,500 ft in the Staples Allotment near Pleasant Valley, to 7,800 ft at the South Mountain lookout in the Indian Meadows Allotment. Common ecological sites in the lower elevations include: Loamy 11-13" big basin sagebrush/ bluebunch wheatgrass, and Loamy 13-16" mountain big sagebrush/ bluebunch wheatgrass/Idaho fescue sites. At the mid elevations, Loamy 12-16" mountain big sagebrush/ bluebunch wheatgrass/Idaho fescue sites are most common. Generally, above 6000 ft Loamy 13-16" mountain big sagebrush/ bluebunch wheatgrass/Idaho fescue, and Loamy 16"+ mountain big sagebrush/Idaho fescue are most common. At the higher elevations, Mountain Brush 18-22" mountain big sagebrush/mountain snowberry/mountain brome ecological sites occur. For example, pasture 2 of the Indian Meadows allotment contains this ecological community type (along with a heavy western juniper component). Throughout each allotment, Shallow-Claypan 12-16" low sagebrush/ bluebunch wheatgrass/Idaho fescue ecological sites (with a heavy western juniper canopy cover) occur. Other notable and common vegetative species found throughout the core area include: *Poa sp.*, *Stipa sp.*, and *Bromus tectorum* (cheatgrass).

3.2 Special Status Plants

Federally listed threatened or endangered plant species are not known to occur on these allotments, although the USFWS (U.S. Fish and Wildlife Service) considers all of Idaho to be within the potential range of Ute ladies'-tresses (*Spiranthes diluvialis*), a threatened orchid species. It is unlikely that Ute ladies'-tresses occurs in these allotments because the elevation, plant communities, and habitats differ from those at known locations (i.e. Rosgen F-type stream, conversion of community to upland or introduced species, poor condition riparian habitats). Inventory of riparian areas have resulted in no Ute ladies'-tresses observations and indicate that most riparian habitats are disqualified based on USFWS habitat descriptions (USFWS 1998). This species will not be discussed further.

In 1996, portions of the Indian Meadows allotment were inventoried for least phacelia (*Phacelia minutissima*), a BLM sensitive species, which was found to occur. Least phacelia is known to occur on public land at four locations in pasture 2 of the Indian Meadows allotment. Two spring-associated sites are found at Noon Cr. and Indian Meadows Springs, both of which are

developed with water troughs but no fencing. The third site is on the upper-most reach of Current Cr. between Noon Creek and Indian Meadows Springs on willow/ *Veratrum* vegetated stream banks. The fourth and largest site is just north of Indian Meadows spring in a forb/ grass meadow.

All extant populations in Idaho occur in the Owyhee Mountains. Least phacelia is closely associated with snow bank areas in the upper portions of mountain drainages at elevations between 5920 and 7160 ft. Plants occur in the moist understory of aspen and tall forb communities (typically false hellebore, *Veratrum californicum*) in meadows or below seeps or springs. Plants are found primarily on small patches of bare soil within these communities. In the Indian Meadows area in a typical year, least phacelia begins growth at snowmelt, flowers in June, fruit matures in July, and senescence by mid-August.

This species can persist in areas subject to light to heavy grazing, at least in the short-term. In July of 1996, Atwood observed adverse impacts to least phacelia habitat at Noon Creek and Indian Meadows springs due to the concentration of livestock near the water troughs. However, he also observed plants at other locations that were subject to over shading in dense *Veratrum* stands. His inventory confirmed that the species is absent from areas with very dense vegetation (willows, *Veratrum*, other tall forbs). From his assessment, it appears that some degree of disturbance is needed to reduce competition or to create the appropriate combination of light and moisture, but again, repeated livestock trampling prior to seed dispersal is adverse.

No other reports, inventories or other data indicates any other BLM sensitive species occur in these allotments.

3.3 Wildlife/Special Status Species

The Indians Meadows core area contains spring/summer/fall habitat for mule deer, elk and pronghorn antelope, some winter deer and elk habitat and yearlong or seasonal habitat for a large diversity of raptors, other non-game birds, mammals, reptiles and amphibians.

One candidate species, the yellow-billed cuckoo, may occur in association with riparian habitats in these allotments but has not been documented to date. A number of species classified as BLM "Sensitive Species" or State of Idaho "Species of Special Concern" are known to occur, or likely to occur within this allotment. These include the prairie falcon, northern harrier, ferruginous hawk, greater sage grouse, calliope hummingbird, rufous hummingbird, dusky flycatcher, gray flycatcher, willow flycatcher, loggerhead shrike, Swainsons thrush, black-throated gray warbler, yellow warbler, MacGillivrays warbler, Wilsons warbler, yellow-headed blackbird, green-tailed towhee, grasshopper sparrow, sage sparrow, Brewer's sparrow, several bat species, pygmy rabbit, western toad and redband trout.

Approximately 23 percent (3.3 miles) of stream riparian habitat within the core area has been determined to be functioning properly. Along with those, springs, seeps and wet meadows excluded from livestock grazing within the core area, are likely to be providing at least marginally suitable habitat for most dependant special status species and other wildlife including redband trout, neotropical migratory birds, bats, amphibians and others. The remaining 11.0

miles (77%) of stream riparian habitat are rated as either functioning-at-risk or nonfunctioning, as well as most unfenced springs, seeps and wet meadows. In these areas, adequate cover, structure, forage and/or water quality for many of these species is being adversely affected.

Upland habitat conditions are highly variable within the core area. Both the Howl Creek and Staples allotments are supporting shrub and herbaceous components that are within site guidelines and adequate to provide for the needs of dependant wildlife and special status animals. However, big sagebrush occurrence is reduced and bitterbrush is heavily hedged and decadent within the Indian Creek allotment. Shrub cover is excessive within much of the Indian Meadows allotment while decreaser grasses are reduced in the Indian Meadows and Stone allotments and generally lacking in the Johnstone allotment resulting in habitat that is less than adequate to provide for needs of wildlife and special status animals within these allotments. Western juniper is common-to-dominant throughout much of the Indian Creek, Indian Meadows and Stone allotments and scattered within the Howl Creek and Johnstone allotments. While providing some habitat for neo-tropical migratory birds, bats and other species, late-seral juniper contributes to the deterioration and loss of habitat for sagebrush steppe obligates such as sage grouse, pygmy rabbit, sage thrashers, sage sparrows, Brewers sparrows and others. Juniper also out competes aspen, which provides important habitat for many wildlife species.

3.4 Riparian/Aquatic Resources

There are numerous stream segments in the Indian Meadows core area, most of which encompass the headwaters of streams, including the North Fork Owyhee River, Williams, Mill, South Mountain, Current and Noon Creek. Other streams in the assessment area are South Boulder, Bogus and Coyote Creeks. There are 15.5 miles of stream in the area: 10% of which is in non-functioning condition; 63% in functioning at risk condition; 21% in proper functioning condition; and 6% unknown. Non-functioning stream segments have eroding banks and little riparian vegetation left on them to stabilize the stream. Functioning at risk segments are at risk of further degradation due to the condition of the vegetation and stream channel. Generally, riparian shrubs important for a healthy stream system are present, however there is poor regeneration and recruitment, or they may occupy only a portion of the stream segment. Vegetation along the stream banks may not be sufficient to stabilize the banks and the banks may be unstable and actively eroding. Segments in proper functioning condition have healthy riparian areas with sufficient vegetation and stable banks to protect the stream. These reaches are typically inaccessible to livestock.

3.5 Water Quality

The North Fork Owyhee River has beneficial use designations of domestic water supply, agriculture water supply, cold water biota, salmonid spawning, primary and secondary contact recreation, and special resource water. Noon Creek is designated for agriculture water supply, cold-water biota, salmonid spawning and secondary contact recreation. Other streams within the assessment area have general use designations for secondary contact recreation, cold-water biota, agricultural water supply, wildlife habitat, and aesthetics. The North Fork Owyhee River is on the State's 303(d) list of water quality impaired streams in the assessment area for bacteria and temperature pollutants. Noon Creek is on the 303d list for flow alteration, sediment and temperature pollutants. Appendix II contains the Water Quality Restoration Plan for streams in

this allotment.

According to analysis contained in the State of Idaho's North and Middle Fork Owyhee Subbasin Assessment and Total Maximum Daily Load (TMDL), the North Fork Owyhee is not fully supporting neither the cold-water biota, nor the salmonid spawning and rearing beneficial uses. Noon Creek does not fully support the salmonid spawning beneficial use. Recent data collected by BLM on Noon Creek in the Indian Meadows Allotment indicate bacteria concentrations exceed the State's criteria in this allotment. In addition, sediment is a pollution of concern on Noon Creek. Unstable channels and weakly vegetated stream banks likely result in elevated sediment levels.

Water temperature in Williams Creek may exceed the State's criteria for cold-water biota. Thermal modification is likely due to the loss of shade producing vegetation such as shrubs and herbaceous grass-like species along streambanks. Additionally, streambank alteration, such as trampling, pugging and shearing, increases stream width and decreases depth, thereby exposing more water to solar radiation and increasing water temperature. Sediment sources are in part due to road crossings, however, another contributor is more likely unstable, eroding streambanks.

3.6 Air Quality

Limited data is available on the air quality of the project burn area because no air quality stations are operating in this portion of Idaho. Some data gathered at a field study station near Silver City (1994, CH2MHill) indicate that levels for PM10 and TSP are well below current Federal and State standards. Average particulate concentrations measured were 28.4 ug/m³ for TSP and 20.1 ug/m³ for PM10. No PM2.5 sampling was done at this time. The PM10 concentration is well below the Federal and State 24-hour standard of 150 ug/m³, and indicates the area has low levels of TSP and PM10. Other parameters, though not monitored, are believed to be below any standards due to the lack of available source of emissions. Existing conditions of the area are expected to meet the National Ambient Air Quality Standards (NAAQS).

The Clean Air Act establishes a national goal of preventing any further degradation or impairment of visibility within federally designated areas. Attainment areas are classified as Class I, II, or III and are subject to the Prevention of Significant Deterioration (PSD) program. Class I areas include national wilderness areas (larger than 5,000 acres) and national parks (larger than 6,000 acres). Class III status is assigned to attainment areas to allow maximum industrial growth while maintaining compliance with NAAQS. All other attainment areas are designated Class II. The project area is a designated Class II area.

Smoke management is necessary to minimize air quality and visibility impacts in smoke sensitive areas from prescribed burning. Prescribed burning should be planned, coordinated, and conducted in order to minimize the impact of smoke by combining favorable atmospheric transport and dispersion conditions with prescribed fire management techniques. These techniques may include (but not be limited to) the size of the burn, season of year, time of day, moisture content of the fuel, fuel treatment, ignition method, and topography of the area.

3.7 Soils

The soils in these allotments are diverse, due to position on the landscape, climate, and source of parent materials. The majority of these soils occur on structural benches, foothills and mountains, and on streams and fan terraces. The main body of soils formed in mixed alluvium, colluvium, and residuum derived from welded rhyolitic tuffs, basalts, and mixed sources. These soils are moderately deep, to deep and well drained. The upper elevation areas have a cryic soil temperature regime while the lower elevation sites are frigid. Soil moisture regimes are xeric. The Dehana, Nagitsy, and Parkay soil series are more representative of the upper elevation soils while the Hat, Sharesnout, and Snell soil series better typify the lower elevation sites. These soils are typically loamy to clayey with high amounts of coarse fragments on the surface and in the profile. The stream and fan terraces are represented by the Paynecreek, Bluecreek, and Northcastle soil series, which are moderately deep to very deep.

Current accelerated erosional processes are evident in portions of Indian Meadows, pasture 1 of Stone, and portions of Johnstone allotments. Most processes involve accelerated overland flow and subsequent flow patterns, pedestalled plants, and soil surface physical features. In these areas, the current vegetative community is a factor in maintaining watershed health. The hazard of erosion on these soils from water is rated slight to moderate with the exception of the soils that occur on slopes greater than 30 percent where the hazard of erosion is rated moderate to very high. The amount of surface rock fragments can greatly modify the hazard of erosion due to the cover they provide. The hazard of erosion from wind is generally low.

Where western juniper and native shrubs have invaded ecological sites (i.e., Loamy 13-16”), they are having a negative influence on hydrological cycles and vegetative composition and density. Where invasion is heavy, juniper and shrubs are highly competitive in terms of available moisture, nutrients, and the photosynthetic needs of understory plants. Currently the Indian Creek, Indian Meadows, and Stone allotments are most affected.

3.8 Cultural Resources

Cultural resources are cultural properties or traditional lifeway values that are identifiable through field inventory, document research and ethnography. They include definite locations or sites, structures, historic trails, natural features, plants or items that have traditional cultural or religious importance to a specific social or cultural group. Traditional lifeway values are religious beliefs, cultural practices and social interactions that are important to the maintenance of a specific social or cultural group's existence and are passed from generation to generation via an oral tradition. Artifacts are the material goods of a culture and are defined as objects that show evidence of human manufacture, modification or use.

Cultural resources are recognized as fragile, irreplaceable resources with potential socio-cultural, public and scientific uses that represent an important and integral part of our nation's heritage. These non-renewable resources are located and identified through field surveys and Tribal consultation, then evaluated for significance and managed according to federal law, regulations and BLM policies, land use plans and activity plans. The BLM generally allows for cultural resource preservation and protection for significant sites by avoiding impacts to significant cultural resource sites, redesigning projects, terminating projects or mitigating the project's

adverse effects by recordation, data recovery, or other agreed upon mitigation measures.

The BLM is authorized under several laws to wisely manage cultural resources on public lands. Cultural resources evaluated as significant would be protected from project impacts and may be nominated to the National Register of Historic Places. Inventory data is incomplete for the area. Sites recorded in the allotments include a campsite; lithic scatters and trash scatters as recorded in BLM records. Past human use of the area included camping, food gathering and hunting. The Shoshone, Paiute and Bannock Tribes inhabited this area.

3.9 Visual Resource Management (VRM)

Public land within the Indian Meadows core area is a mix of VRM Class I, II, III, and IV lands. The objective in Class I areas is to preserve the existing character of the landscape, and construction of new rangeland facilities is not permitted. Within VRM Class II areas, the objective is also to retain the existing character of the landscape, and very limited construction of new rangeland facilities may be permitted outside of wilderness study areas. In Class III areas, changes to the characteristic landscape should be moderate, and in Class IV landscapes, the level of change can be high. In the area, all of the Class I and the majority of the Class II landscapes are located in the Indian Meadows Allotment. Within the Indian Meadows Allotment, the natural character of some landscapes (VRM Class I and II areas) has been degraded by heavy livestock grazing. As documented in the Indian Meadows Assessment, livestock grazing impacts include bare ground, stream bank alteration, and inadequate diversity and structure of plant communities.

3.10 Recreation

Part of pasture 2 (approximately 3,880 acres) of the Indian Meadows Allotment is located within the North Fork Owyhee Backcountry Special Recreation Management Area (SRMA). The main recreational activities within the SRMA, which totals 56,801 acres, are backpacking, horseback riding, camping, hunting, fishing, sight-seeing, and nature study. Livestock impacts in some riparian and upland areas have caused deteriorated natural settings, which detract from recreational experiences of visitors. Examples of deteriorated settings include areas along the North Fork Owyhee River, Current Creek, and Noon Creek. The remainder of the Indian Meadows Allotment, and all of the public land within the other allotments in the core area, is not included in a SRMA, and recreational use is not emphasized.

Recreation Opportunity Spectrum classification is used to characterize the type of recreational opportunity settings, activities, and experience opportunities that can be expected in different areas on public land. This area provides a mix of primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, and rural settings for recreation.

The North Fork of the Owyhee River was determined to be suitable for inclusion in the Wild and Scenic River System, in the Owyhee Resource Management Plan (1999). Approximately 1.5 miles of the suitable river, classified as “wild”, are located within the Indian Meadows Allotment, in pasture 2. The designation is recommended due to the outstandingly remarkable scenic, recreational, geological, and wildlife values present. Within pasture 2, part of the North Fork was determined to be functioning at risk. Downstream from the allotment, all of the North

Fork of the Owyhee River within Oregon (9 miles) was designated by Congress as a component of the Wild and Scenic River System in 1988.

Off-highway vehicle (OHV) designations in the area include areas where vehicles are limited to existing roads and trails, limited to designated roads and trails, and closed to motorized access. All of the area closed to motorized access is within pasture 2 of the Indian Meadows Allotment. OHV regulations apply to permitted uses as well as to general public use.

3.11 Wilderness Study Areas (WSA)

A 3,958 acre-portion of the North Fork Owyhee River Wilderness Study Area is located within pasture 2 of the Indian Meadows Allotment. The WSA totals 41,025 acres. The majority of the Indian Meadows Allotment, and all of the other allotments, are outside of the WSA.

WSAs are managed in such a manner to not impair their suitability for preservation as wilderness. Wilderness values to be protected include solitude, naturalness, opportunities for primitive and unconfined recreation, and the presence of special features that enhance wilderness values. Special features recognized for this WSA include exceptional scenic quality, because of its spectacular sheer-walled canyons and rock outcrops highlighted with gnarled juniper. Sensitive wildlife species were also included as a special feature in the wilderness recommendation.

Livestock grazing in WSAs is considered a “grandfathered” use that may continue in the same manner and degree in which it was being conducted on October 21, 1976, if it does not cause unnecessary or undue degradation of the lands and their resources. There are fences along portions of the allotment boundary and two Current Creek exclosure fences located within the wilderness study area portions of the Indian Meadows Allotment.

The assessment documents heavy livestock grazing, trampled streambanks, impaired stream functionality, and reduced vegetation in some places within the wilderness study area portions of the allotment. This has a negative effect on the wilderness values of naturalness and scenic quality, and has a negative effect on recreationists’ experiences of wilderness.

4. ENVIRONMENTAL IMPACTS

4.1 Direct and Indirect Impacts of Proposed Action

4.1.1. Indian Creek (0649)

4.1.1.1. Upland Vegetation

The proposed fence in this allotment would control late season grazing on BLM land and mitigate the late season grazing effect on bitterbrush. During construction, upland vegetation along the route of the fence line would be directly impacted; shrubs and trees would be pruned or removed along the fence route. Impacts to herbaceous vegetation would be minimal because construction of the fence would have to be completed by foot or horseback due to the rough terrain. For the short term, livestock trailing impacts along the fence line would occur until cattle

become familiar with the new location of the fence. New permanent livestock and game trails would likely be created over time. However, upland vegetation conditions would improve due to the shortened overall season of use, and the fence would control cattle movement throughout the grazing season.

4.1.1.2. Special Status Plants

Special status plants are not known to occur in this allotment. Impacts from the proposed change in management cannot be determined with the information that is available. Impacts from range developments on special status plants would be mitigated through site-specific ground clearances.

4.1.1.3. Wildlife/Special Status Animals

Under this alternative, the continuation of annual late summer and fall grazing in Pasture 1-Mill Creek (98% State and private land; and 2% BLM administrated public land – Map 1) would likely result in the continued excessive utilization and poor vigor of bitterbrush leading to less and less browse availability for deer and elk and cover for a diversity of other species. However, the implementation of a deferred grazing system should result in improved vigor and abundance of herbaceous vegetation by providing protection from livestock grazing during the active growing season. This should result increased cover and forage and a lack of physical disturbance of wildlife and special status habitats and populations during the important nesting/breeding season.

In Pasture 2-Bogus Creek (Map 1), the elimination of most hot season grazing would result in the steady improvement of riparian habitat along Bogus Creek that should include improved forage, cover and structure for the vast majority of riparian dependant special status animals and other wildlife. However, vigor and production of desirable upland herbaceous vegetation could continue to be adversely affected by annual grazing during the active growing season which would likely be reflected by reduced cover, forage and seed availability for wildlife, especially during the nesting/breeding season. With this being true, mitigation is being incorporated to ensure that within 5 years, short-term management objectives (as proposed in section 2.1.1 of the proposed action) are being met, and significant progress is being made to achieve Standards for Rangeland Health. At that time if it is determined short-term objectives are not being met, grazing management changes could be made to achieve these objectives. This, along with the physical disturbance associated with grazing, could result in increased exposure of nests and young to predation and the elements, trampling of nests, eggs and young and more frequent flushing of nesting birds that also exposes eggs and young to increased predation and parasitism. The continued encroachment and increasing dominance of western juniper throughout the allotment could also result in additional loss and deterioration of habitat for sagebrush steppe species such as sage grouse, sage sparrow, Brewer's sparrow, sage thrasher, pygmy rabbit and others. Furthermore, it is important that yearlong or seasonal habitat for others species including: Townsend's solitaire, American robin, mountain chickadee, chipping sparrows, some bats and others, continue to thrive in juniper woodlands.

The proposed pasture division fence would result in some short-term disturbance to wildlife during construction and some minor long-term impediments to movement of deer and elk and

deterioration of habitat in the immediate vicinity of the fence. It would also facilitate implementation of the proposed grazing system along with its described impacts to wildlife and special status species.

4.1.1.4. Riparian/Aquatic Resources

Bogus Creek (pasture 2) would make progress towards riparian proper functioning condition. Limiting livestock grazing would allow the stream to develop and maintain a healthy riparian plant community dominated by late-seral riparian species with good cover and density. The stream channel condition would improve over the long term as it narrows, deepens and stabilizes. Aquatic habitat would show progress as the stream channel narrows and riparian cover improves resulting in lower stream temperatures and sediment. Monitoring the stream on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous riparian plant community. The proposed division fence would facilitate implementation of the proposed grazing system along with improvement in riparian health. Construction and maintenance would not impact riparian/aquatic resources.

4.1.1.5. Water Quality

Water quality would improve under the proposed action as the riparian condition of the stream improves. With the development of dense and vigorous riparian plant communities dominated by riparian shrubs, channel form would improve and riparian shade would increase. Both would result in cooler stream temperatures by reducing the amount of solar energy input into streams. Additionally the development of plant communities would stabilize stream banks and channels, resulting in lower levels of fine sediment from eroding, unstable banks. Aquatic habitat would improve for aquatic species and macro invertebrates. Limiting grazing would reduce the numbers and concentrations of fecal coliform and *E. coli*. Over the long-term, Bogus Creek would fully support beneficial uses and comply with State of Idaho water quality standards.

The proposed division fence would facilitate implementation of the proposed grazing system along with improvement in water quality. Construction and maintenance would not impact water quality.

4.1.1.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, could be positive and watershed health could improve slightly in the Mill Creek pasture. As indicated in the wildlife section above, continuous grazing during the critical growth period in the Bogus Creek pasture could result in a decrease in perennial grass health. However, shortening the overall season of use from season long to June 1 through July 15 should show slight improvements in overall plant community health and soil conditions. It is currently meeting the Standards for Rangeland Health but has problem areas that probably would not show much (if any) improvement towards meeting those standards. In portions of the allotment where livestock use is limited, Standards are being met and would be expected to continue to be met. Under the Proposed Action, livestock would graze the Mill Creek pasture after the critical growth period for the key species and during the critical growth period in the Bogus Creek pasture every year. Success and improvement would depend on the degree of utilization and livestock movement (mechanical soil impacts). With this being true, mitigation is

being incorporated to ensure that within 5 years, short-term management objectives (section 2.1.1 of the proposed action) are being met, and significant progress is being made to achieve Standards for Rangeland Health. At that time if it is determined short-term objectives are not being met, grazing management changes could be made to achieve these objectives. It must be realized that under any improved grazing system positive changes to the watershed characteristics such as, making progress in terms of watershed /rangeland health, would take time and is dependent on other attributes and not just grazing. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate.

Actions associated with fence construction, moving, and removal would have minimal impacts on the soil resource. Again, where these projects aid in the distribution and management of livestock a positive impact could occur on the watershed. There could be impacts to the soil resource (compaction, mechanical damage and vegetative stripping) along the fence line and at gates if livestock tend to trail and congregate in these areas.

4.1.1.7. Cultural Resources

The proposed action would improve overall ecological condition which would preserve the integrity of cultural resources. Unfenced riparian zones and springs could adversely affect cultural resources because cattle tend to concentrate and trample the ground in these areas, resulting in loss of integrity on cultural resource sites. The direct impact of livestock to cultural resources is possible artifact breakage and movement that livestock could create with grazing, trailing, and trampling. Indirect impacts of grazing on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context. Additional impacts of the proposed action would be addressed on a project-by-project basis for compliance with Section 106 of the National Historic Preservation Act. Through the Section 106 process, adverse effects would be avoided or mitigated to an acceptable level of impact.

4.1.1.8. Visual Resource Management

This alternative would have a positive impact on visual resources over the long term. Anticipated improvements in vegetative cover and diversity, both in the Bogus Creek riparian area and the uplands, would enhance scenic quality and result in more primitive and natural landscapes. The fence is proposed in a Class III VRM area where that type of construction is acceptable.

4.1.1.9. Recreation

There would be positive and negative impacts to recreation under this alternative. Improvements in scenic quality due to improved vegetative condition and diversity would positively affect recreationists' experiences. This improvement would be somewhat cyclic, as vegetative conditions observable to recreationists would vary dramatically depending on the time of visitation relative to when the area had been grazed. Improved habitat conditions for wildlife would lead to improved opportunities for wildlife viewing, hunting, fishing, and nature study. Areas where livestock congregate would continue to negatively affect recreationists' experiences, both during and after the grazing season.

The new fence would be an impediment to cross-country travel for recreationists on foot and horseback, traveling between federal and state land.

4.1.2. Indian Meadows (0520)

4.1.2.1. Upland Vegetation

The proposed action would incorporate rest and occasional deferment into the grazing schedule for Noon Creek Pasture and occasional deferment in Mill Creek and Williams Creek Pastures. Reintroducing fire in portions of these pastures, along with proper grazing management, would increase the currently depleted perennial grass understory and maintain the sagebrush and mountain shrub communities by controlling juniper encroachment and creating open areas. Perennial grasses would experience increases in health and vigor, and eventually increased seed production and recruitment. Deferment would eliminate livestock trampling of saturated soils and perennial grass crowns during the wet spring season. The rest schedule in Noon Creek Pasture, would improve the riparian areas, and enhance the recovery process for upland grasses. The change in season of use in the pastures would allow perennial grasses to continue growth after the grazing period ends. This growth would carry over into the winter and next spring, increasing soil protection and contributing organic matter back to the soil profile, which binds soil particles and resists active erosion.

The establishment of a cooperative grazing system between the BLM and IDL on this allotment would result in long-term improvement to the lands managed by both agencies. Impacts of livestock grazing on state land would be difficult to assess since Idaho Department of Lands uses different criteria for determining appropriate pre and post livestock grazing on burned areas.

In Noon Creek Pasture following the prescribed fire, mountain shrubs such as ceanothus, current, chokecherry, and serviceberry would re-sprout. Some bitterbrush would re-sprout from existing roots, and new individuals would become established from soil seed caches. Aspen stands, scattered throughout Noon Creek Pasture would re-sprout and increase in size and productivity and would achieve a diverse age structure. Rest from grazing following the fire would allow the vegetation to re-establish, and would protect re-sprouts from livestock grazing and trampling. In this allotment, mountain mahogany occurs mostly in rocky areas, which are less likely to burn intensely. Depending on fire severity, some mahogany plants could be killed by the prescribed burn. Short-term mortality to some mahogany plants would be offset by the long-term benefits of controlling the competing juniper and providing areas for new mahogany seedling recruitment.

The impacts of prescribed fire in the Williams Creek Pasture would be similar. Although mountain big sagebrush and ceanothus dominate this area, shrub response to fire would also be favorable. For the short term, mountain big sagebrush would be removed and the herbaceous understory would have an opportunity to expand and increase. At this elevation, mountain big sagebrush would re-establish from seed caches and nearby seed sources.

Moving the Current Creek fence would improve upland conditions in areas currently impacted by livestock trailing along the fence route. However, new trailing would occur along the new fence route, especially near the water trough at Indian Meadows Spring, which would be located outside of the riparian pasture. It would be expected that cattle would congregate at this water source along the fence line, creating new impacts at this location. To minimize this the fence would be strategically designed to minimize corners. Short-term impacts expected would include livestock movement along the fence line and pruning juniper and mountain shrubs during construction and removal of the fences. These impacts would be kept to a minimum and recovery of vegetation would be expected by the next year. Upland vegetation within the newly fenced areas would improve overtime, however areas previously located within the enclosure would be expected to remain in the same condition and be maintained overtime.

Minimal vegetative impacts would be expected during reconstruction of the fences of the Noon Creek Pasture. The entire fence route, due to rough terrain and inclusion within the WSA, would be reconstructed using horses or on foot. Vehicles and OHV use would be limited to existing roads only. Minor branch removal and pruning of existing shrubs would be required to access portions of the fence. Impacts from pruning would be mainly visual and restricted to the fence line and recovery would be expected within a few years.

Construction of the phacelia enclosure would be expected to only minimally impact existing vegetation. The fence line route is easily accessed directly off an existing two-track road and impacts would include driving along the fence route during construction. Complete recovery of the grasses/sagebrush would be expected by the end of the growing season following construction. Construction of this enclosure would be expected to dramatically increase the health, vigor, and density of the wet meadow vegetation within it. Only minor livestock trailing impacts would be expected along the perimeter of the enclosure for the first few grazing seasons. Without a water source or a salt lick located directly adjacent to the enclosure, livestock impacts are expected to decrease with time as cattle become accustomed to the new fence. Furthermore, due to the flat terrain and the existence of the adjacent road, it would be expected that cattle would adapt very quickly to moving on to other areas.

4.1.2.2. Special Status Plants

Two of the four least phacelia populations in pasture 5 (Noon Cr. pasture) would be protected from the adverse impacts of livestock grazing inside enclosures. It is unclear how phacelia would respond to an increase in competition from native increaser plants such as false hellebore and noxious weeds (Canada thistle). If monitoring shows population declines, the enclosures may be opened to fall grazing. The other two populations would continue to be adversely impacted, primarily from livestock trampling, two years out of five during their critical growth period. Turnout between July 15 and August 1, as in year 2, would allow most plants to disperse some seed in most years, but impacts would still occur. These two unfenced populations would not be subjected to livestock grazing impacts in two out of five years (years 3 and 5). Overall, this rotation cycle is an improvement over current management in maintaining the viability of the least phacelia populations that occur in pasture 5.

The impact of prescribed fire on least phacelia populations would be mitigated by avoidance.

Fire itself should not adversely impact least phacelia habitat, but associated activities may cause ground disturbance. Designation of avoidance areas around known least phacelia populations would eliminate adverse impacts from prescribed fire activities.

4.1.2.3. Wildlife/Special Status Animals

Under this alternative, a reduction in the frequency and duration of hot season grazing in Pastures 1 and 5 should result in improvement of riparian habitat for dependant wildlife and special status animals in Pasture 1. However, some hot season grazing would continue to occur, in two years out of five, in pasture 1 and would limit the rate and extent of riparian habitat improvement. While hot season use in Pasture 5 would be limited to one year in five, the one-year of scheduled early-fall use could also result in unacceptable levels of riparian use and would need to be closely monitored. The indefinite exclusion of most of Current Creek in Pasture 5 followed by only very limited grazing should result in the rapid improvement of riparian and adjacent upland habitat along previously unprotected stream reaches and continued improvement of reaches that have been excluded since 1983. The predominance of deferred grazing treatments in pastures 2 through 5 should result in the steady improvement of upland habitats by allowing herbaceous vegetation to complete active growth and produce seed prior to grazing in most years. However, three out of five years of spring grazing in Pasture 1 could adversely affect vigor and production of desirable upland grasses and forbs and would reduce wildlife cover and forage, especially during the critical nesting/breeding season. It would also result in some trampling of nests, eggs and young and more frequent flushing of nesting birds that exposes eggs and young to increased predation, parasitism and exposure the elements.

Controlled juniper burn treatments are expected to result in increased quantity and improved quality of habitat for sagebrush steppe species including sage grouse, sage sparrow, sage thrasher, Brewer's sparrow, pygmy rabbit and others as western juniper is reduced from some sagebrush communities. Conversely, habitat for a diversity of species associated with juniper woodlands including black-throated gray warblers, gray flycatchers, Townsend's solitaire, hermit thrush, various bats and others would be reduced, although an abundance of habitat for these species would remain untreated.

Construction of 7.5 miles of new fence and reconstruction of 5.0 miles of existing boundary fence, could result in some impacts to wildlife, including: short-term disturbance during construction, minor long-term impediments to movement of big game, long-term increases in wildlife mortality from collisions and entanglement, and deterioration of habitat in the immediate vicinity of the fence. However, these impacts would slightly be offset by the removal of 2.0 miles of existing exclosure fence and the long-term improvement of wildlife and special status species habitat that would be derived from improved livestock management and exclusion.

4.1.2.4. Riparian/Aquatic Resources

Williams and South Mountain Creeks in Pasture 1 and Mill Creek in Pasture 2 would improve under reduced hot season grazing and changes in season of use. Fall use may result in browse of riparian shrubs, but as long as short-term objectives are met, particularly in Year 2 of the rotation, the overall change in management would result in improving riparian areas. Bank alteration would be reduced under fall use because soils would be dryer, more stable and less

vulnerable to trampling. Spring use would increase willow regeneration and improve the desirable herbaceous community with adequate re-growth time. It is unlikely that livestock would browse the willows in the early spring, if there were adequate herbaceous vegetation in the uplands and riparian areas.

Riparian, stream channel and floodplain conditions in Pasture 5 would improve by incorporating a grazing system, particularly in comparison with season long use it now receives. Current Creek would benefit a great deal under this proposal. Fencing most of Current Creek and excluding livestock grazing until the stream has recovered would result in improvement of riparian health, not only in this allotment, but in downstream reaches as well. At present, Current Creek is eroding, and lacks the riparian vegetation to help stabilize stream banks. For the remainder of the pasture, limiting hot season grazing and incorporating one year of rest would allow the riparian areas on the upper portion of Current Creek, Noon Creek, Noon Creek Tributary and the North Fork Owyhee River to progress towards proper functioning condition.

Limiting livestock grazing would allow streams to develop and maintain a healthy riparian plant community dominated by late-seral riparian species with good cover and density. Stream channels would improve over the long term as they narrow, deepen and stabilize. Aquatic habitat conditions would improve as channel form recovers; fine sediment levels decrease, and stream shading levels increase due to the development of dense and vigorous riparian plant communities dominated by riparian shrubs. Density and diversity of late-seral riparian species would improve on stream segments that are currently in proper functioning condition due to lighter livestock use of riparian vegetation. Monitoring the streams on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous riparian plant community.

Numerous springs occur in the allotment. There are four developed springs, one of which is excluded from livestock grazing. This spring would continue to function properly. Several springs are located near the headwaters of Williams, Mill and South Mountain Creeks. Conditions of springs are expected to improve under the proposed action.

It is expected that prescribed fires in the allotment would not directly impact riparian communities or stream channels, and in the long-term should provide a benefit to aquatic resources, by improving livestock distribution and hydrologic function in the watershed. Resting pastures associated with the prescription would also increase riparian vegetation production and boost recovery. If burned, riparian shrubs and graminoids are likely to respond well to low severity fire, but could be killed in a high severity fire.

Rainfall and snowmelt runoff would increase from burned surfaces, until the site was revegetated. If a large runoff-producing event occurred before vegetation became established, headwater draws could become scoured and sediment could be delivered downstream. By preventing the site from becoming dominated by juniper, in the long term, more runoff would be captured, stored, intercepted, infiltrated and released more slowly. By retaining more moisture in draw bottoms, rather than just conveying water through, vegetation would benefit and would help to dissipate any runoff that occurred.

New fence construction and maintenance would help control livestock, thereby promoting improvement in riparian conditions on streams and springs. Current Creek Fence would have a positive impact on this allotment, and those downstream as conditions improve and sediment transport is reduced. Fencing this stream would allow it to recover and would enhance habitat and water quality. There are no expected adverse impacts to streams or springs due to fence construction and maintenance.

4.1.2.5. Water Quality

Water quality would improve over the long-term. With the development of dense and vigorous riparian plant communities dominated by riparian shrubs, channel form would improve (deeper and narrower channels) and riparian shade would increase. Both would result in cooler water temperatures by reducing the amount of solar energy input into streams. Additionally, the development of vigorous riparian plant communities would stabilize streambanks and channels, resulting in lower levels of fine sediment from eroding, unstable streambanks. Aquatic habitat would improve for aquatic species and macro invertebrates. Limiting grazing would reduce the numbers and concentrations of fecal coliform and *E. coli* entering streams and springs. Over the long-term, streams on the allotment would fully support beneficial uses and comply with State of Idaho water quality standards, particularly Noon Creek, which is a 303d listed stream. Improvements in water quality of these streams would result in improvements downstream.

The hydrologic cycle and nutrient cycle would function more effectively with restoration of upland areas. Relative to a juniper dominated site, healthy shrub and bunchgrass communities in the uplands hold more snow in place, allow improved infiltration of snowmelt and rain, and provide a steadier runoff pattern, which could increase the flow duration of seeps and springs, with a resultant increase in downstream flow and flow duration. With improved watershed function, there would be less opportunity for accelerated erosion and sediment entering streams.

State water quality standards for sediment and nutrients could be exceeded if a large runoff event occurred before re-establishment of groundcover. In the long-term, the slower release of water from the upland watershed and the ability of draw bottom vegetation to maintain bank stability would aid in preventing sediment movement down slope and capturing sediment that may be transported from the uplands. Improving livestock distribution would benefit water quality. Resting pastures associated with prescription would also increase riparian vegetation production, boosting recovery and thereby improving water quality.

New fence construction and maintenance would help control livestock, thereby promoting improvement in water quality on streams and springs. Current Creek Fence would have a positive impact on this allotment, those downstream as conditions improve, and sediment transport is reduced. Fencing this stream would allow it to recover and would enhance habitat and water quality. There are no expected adverse impacts to streams or springs due to fence construction and maintenance.

4.1.2.6. Air Quality

During the prescribed burn, the desired atmospheric condition would be an unstable atmosphere favoring a rising smoke column. Burning would proceed during stable and unstable atmospheric conditions with expected smoke suspension to be short lived and scattered over wide areas. Any wind speed below 15 mph from a northwest or westerly direction is acceptable.

Smoke from the project burn would be visible over a wide area of western Owyhee County. The communities of Murphy and Silver City could be briefly impacted by the smoke. Notifications would be made to area residents and local authorities prior to burning. Smoke would be noticeable for 1-2 days following the burn. Typically, smoke is not noticeable three to four days following a burn project of this size.

On the average, less than 1 ton of fuel per acre would be consumed. Particulate emission would be expected to be less than 13 pounds per acre. No violations of the NAAQS would be anticipated.

Daytime haze would predominate over the landscape closest to the project site. Nighttime inversions could trap residual smoke from smoldering fuels in drainages and valley bottoms until prevailing winds or a weather system change purged smoke from these areas.

4.1.2.7. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, could be positive and watershed health would improve, especially with anticipated progress in the health of riparian systems. Most areas of pasture 5 are currently meeting the standard related to watershed health and with this system, which includes rest and deferment, would continue to meet the standard with improving conditions. Pastures 1 and 2, which have portions that are currently not fully meeting this standard, could show progress towards meeting the standard by adding some deferred grazing into the system. In portions of the allotment, where livestock use is limited, this Standard is being met, and would be expected to continue to be met.

Implementing a grazing system that incorporates rest and deferred grazing would aid in improving the vegetative component of the watershed as well as the structural nature of the soils. Rest and deferment benefit plant vigor and growth (which increases ground cover), seed production and potential reestablishment, and the litter contribution to the natural system. The proposed system could aid in making progress towards correcting current watershed problems where they are evident. Much of this is dependent on utilization levels and livestock movement. It must be realized that under any improved grazing system positive changes to the watershed characteristics and making progress in terms of watershed/rangeland health, would take time and is dependent on other attributes and not just grazing. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate (especially during times when soils are saturated).

In the short-term, immediately following any fire, there would be a risk of accelerated soil erosion, especially on the steeper sloped areas, and subsequent increased sediment entering

waterways as a result of the removal of vegetation cover and litter. The potential for accelerated erosion would mainly be dependent on the intensity of the burn and post-fire climatic events such as, large rainfall events or excessive spring runoff. However, with much of the burn area proposed to be burned in a mosaic, unburned communities would help provide buffer areas to slow the effects of surface runoff and collect any sediment that could move off-site before the sites become stable. As the sites become re-vegetated, the potential for accelerated erosion would decrease and, depending on the success of the treatment and post treatment management, should function more efficiently in terms of watershed health.

Preventing the long-term decline in ecological condition, which accompanies juniper dominance, better watershed function (hydrologic, nutrient, and energy cycles) would be expected. Healthy shrub and bunchgrass communities would stabilize soils, improve infiltration and storage, prevent excessive runoff, and maintain soil productivity.

Intense surface heat, causing soil sterilization and possible hydrophobicity, should be minimal because trees on the site are still standing and there is little surface litter. Where shrub cover is thick (as in pasture 1) or where there is thick litter, as under individual juniper trees, soil surface temperatures may reach critical levels and some soil heating affects would occur. In areas where there are adequate seed sources of native perennial plants, the sites should reestablish vegetative cover in a few years. Those areas that lacked good understory vegetation and are subject to high soil heating levels may take years for reestablishment and would be subject to accelerated soil erosion and invasive species colonization.

Actions associated with fence construction/moving/removal would have minimal impacts on the soil resource. Again, where these range improvement actions aid in the distribution and management of livestock a positive impact could occur on the watershed. There could be impacts to the soil resource (mechanical damage and vegetative stripping) along the fence line and at gates if livestock tend to trail and congregate in these areas.

4.1.2.8. Cultural Resources

This alternative has potential to improve overall ecological condition and preserve the integrity of cultural resources. However, it could adversely affect cultural resources in some unfenced riparian zones and springs because cattle tend to concentrate and trample the ground in these areas, resulting in loss of integrity on cultural resource sites.

Additional impacts of the prescribed burns would be addressed on a project-by-project basis for compliance with Section 106 of the National Historic Preservation Act. As a result of the 106 process, adverse effects would be avoided or mitigated to an acceptable level of impact.

4.1.2.9. Visual Resource Management

This alternative would have a positive impact on visual resources over the long term. Anticipated improvements in vegetative cover and diversity, both in the riparian areas and in the uplands, would enhance scenic quality and result in more primitive and natural landscapes. The proposed action would result in improvements in diversity of line, form, color, and texture in the uplands, which would enhance scenic quality and result in more primitive and natural landscapes

over the long term.

Activities related to prescribed fire would positively affect visual resources over the long term (20 years plus), by creating expansive openings and establishing a more varied vegetative community than currently exists. In the short and mid-term (0 to 20 years), negative impacts to visual quality would occur resulting from charred soils, blackened trees and shrubs, and a reduction in shrub density. As shrub species become reestablished, the visual contrast between burned and unburned areas would diminish. Some of the negative visual impacts of juniper control projects would be reduced by designing burns in an irregular mosaic pattern with a mix of treated and untreated areas.

Construction of new range facilities in VRM Class II areas within wilderness study areas is not permitted. The proposed Current Creek fence would be constructed by extending one end of two existing enclosure fences and removing roughly equivalent lengths of the existing enclosure fencing. Therefore, the fence would not result in an increase in the total amount of fencing, or have a negative effect on visual resources in this Class II area. The wet meadow enclosure would be constructed in a VRM Class IV area where new construction is acceptable. Reconstruction of the pasture boundary fence would have a short-term negative visual effect due to the pruning of heavy shrubbery along the fence route. However, in the long-term, vegetation would recover and visual qualities would return to pre-work levels.

4.1.2.10. Recreation

There would be positive and negative impacts to recreation under this alternative. Improvements in scenic quality due to improved vegetative condition and diversity would positively affect recreationists' experiences. This improvement would be somewhat cyclic, as vegetative conditions observable to recreationists would vary dramatically depending on the time of visitation relative to when the area had been grazed. Improved habitat conditions for wildlife would lead to improved opportunities for wildlife viewing, hunting, fishing, and nature study. Improvements in scenic quality, recreational opportunities, riparian conditions, and wildlife habitat along the North Fork Owyhee river corridor would slightly enhance its wild and scenic river values. Areas where livestock congregate would continue to negatively affect recreationists' experiences, both during and after the grazing season. New and reconstructed fences would be an impediment to cross-country travel for recreationists on foot and horseback.

Areas where prescribed burns are conducted would over the long term (20 plus years), develop more diverse plant communities and wildlife populations, which would be positive for recreation. The short-term loss of shrubs, blackened trees, and slash accumulations would negatively affect recreation.

4.1.2.11. Wilderness Study Areas

This alternative would have primarily positive impacts to wilderness values in the North Fork Owyhee Wilderness Study Area. Adjustments to the scheduled use periods and years of rest from livestock grazing in the Noon Creek Pasture and the new Current Creek Pasture would reduce livestock-related impacts to naturalness. Scenic quality, which is one of the special features of the North Fork Owyhee WSA, would improve as vegetative condition improves.

Habitat conditions for redband trout, another special feature of the North Fork Owyhee WSA, would improve as livestock-related impacts to the North Fork watershed are reduced. The wilderness value of naturalness would continue to be negatively affected in portions of the wilderness study area where livestock congregate.

Prescribed fire operations are planned so that the use of vehicles, temporary fences, pre-cutting of trees, and fire line construction would be conducted outside of the WSA. The prescribed fire within the WSA should have similar impacts as natural fire within a WSA. It would negatively affect scenic quality in the short term, and in the long term, as the vegetative communities improve, should have positive impacts to naturalness.

Negative impacts to wilderness related to livestock developments within the WSA would remain but not increase, as long as motorized vehicles (including all-terrain vehicles) are not used off-road to reconstruct the boundary fences, to change the configuration of the Current Creek fences, or for future maintenance of livestock developments.

4.1.3. Stone (0650)

4.1.3.1. Upland Vegetation

As determined in the assessment, deteriorated uplands were mainly due to heavy historical livestock grazing. As also indicated in the assessment, this allotment has been rested from grazing since 1996. Although standards were not being met, current livestock grazing management was not at fault because grazing had not occurred since 1996. Under this proposed action livestock grazing would be authorized (8/1-10/31) after the critical growth periods of perennial grasses (4/1-7/15) to allow for improved health, vigor, and recruitment of increaser and decreaser bunchgrasses. Over time, with improved vigor of existing perennial grasses, competition between perennial grasses and cheatgrass would be expected to decrease with perennial grasses increasing in overall numbers and densities. However, complete elimination of cheatgrass would not be expected. Improved health, vigor, and recruitment of bunchgrasses would directly improve soil protection with improved vertical grass cover, residual vegetative litter, and soil stability due to stronger root systems.

Existing browse shrubs such as bitterbrush (not common) could become susceptible to livestock use during this prescribed season of use (late-summer/fall). However, the canopy component of this allotment is dominated by western juniper and mountain big sagebrush. During years of monitoring, further attention to browse use of bitterbrush and other shrubs would be recommended to ensure that they are not being impacted. Under this alternative and without the introduction of fire, western juniper would be expected to continue its increase in these community types.

4.1.3.2. Special Status Plants

Special status plants are not presently known from this allotment so the effects of changing management cannot be determined. It is likely that habitats for upland sensitive species would improve, while riparian habitats accessible to livestock would be adversely impacted by the hot

season use.

4.1.3.3. Wildlife/Special Status Animals

Under this alternative, although much of the stream riparian habitat in this allotment are inaccessible to livestock, annual hot season grazing is likely to result in the deterioration of riparian habitat conditions for the large diversity of dependant wildlife and special status animals along those reaches of South Boulder Creek that are accessible. Primary impacts are likely to include reduced cover, forage and structure resulting from concentrated livestock grazing and trampling. Upland habitat conditions should generally improve in response to annual deferred grazing that allows vegetation to complete growth and seed production prior to grazing and avoids physical disturbance of habitats and populations during the critical nesting/breeding season. However, annual late summer and fall use could possibly result in excessive browsing of palatable shrubs such as bitterbrush and others that would reduce important late summer/fall forage for deer and elk and the long term deterioration of this shrub component that provides forage and cover for a diversity of wildlife species. The continued encroachment and increasing dominance of western juniper would result in additional loss and deterioration of habitat for sagebrush steppe species such as sage grouse, sage sparrow, Brewer's sparrow, sage thrasher, pygmy rabbit and other species. While providing additional important yearlong or seasonal habitat for others including as Townsend's solitaire, American robin, mountain chickadee, chipping sparrows, some bats and others that thrive in juniper woodlands.

4.1.3.4. Riparian/Aquatic Resources

The 1.8-mile stretch of South Boulder Creek is in proper functioning condition and is currently meeting rangeland standards 2 and 3. Most of the stream is well armored with boulders and mature vegetation and these sections are stabilizing the stream. This alternative would result in continued livestock impacts in areas accessible to cattle, but effects would be localized and are not expected to affect riparian functioning condition. Monitoring the allotment on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous plant community.

There are no springs on public land in this allotment.

4.1.3.5. Water Quality

South Boulder Creek is not meeting the standard for Water Quality due to exceeding temperature criteria, however, the stream is in proper functioning condition and is meeting Standards 2 and 3. This alternative is not likely to result in improved water quality for this segment of South Boulder because of conditions in the upper watershed that are currently impacting this reach. The upper watershed is made up of private and state lands and it likely that water temperature is elevated when the stream crosses onto BLM. Monitoring the allotment on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous plant community.

4.1.3.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, could be positive and watershed health could improve. This pasture is

currently not fully meeting the watershed health standards. In portions of the allotment where livestock use is limited, Standards are being met, and be would be expected to continue to be met. Under the Proposed Action, livestock would graze the pasture after the key grass species have met their phenological growth needs. This would allow the key forage species to increase in vigor, potential seed production, and possible reestablishment thereby improving the vegetative component as it relates to watershed health. The proposed system would assist in making progress towards healing these processes where they are evident. Much of this is dependent on utilization levels and livestock movement. It must be realized that under any improved grazing system, positive changes to the watershed characteristics and making progress in terms of watershed/rangeland health would take time and is dependent on other attributes and not just grazing. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate.

Watershed impairing effects due to western juniper invasion would continue. Where the key forage species are allowed to meet their phenological growth needs these plants can better compete with the juniper for moisture and nutrients thereby offsetting some of the negative impacts associated with juniper invasion.

4.1.3.7. Cultural Resources

This alternative has potential to improve overall ecological condition and preserve the integrity of cultural resources. However, it could adversely affect cultural resources in some unfenced riparian zones and springs because cattle tend to concentrate and trample the ground in these areas, resulting in loss of integrity on cultural resource sites. The direct impact of livestock to cultural resources is possible artifact breakage and movement that livestock could create with grazing, trailing, and trampling. Indirect impacts of grazing on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.1.3.8. Visual Resource Management

There would be no effect to visual resources.

4.1.3.9. Recreation

There would be no effect to recreation.

4.1.4. Howl Creek (0655)

4.1.4.1. Upland Vegetation

Under this alternative, current livestock management would maintain native plant communities. Idaho fescue and bluebunch wheatgrass would continue to dominate the understory and interspatial areas with Sandberg bluegrass. During the rangeland health evaluation, it was observed that the site was highly productive, with a diverse age structure, and adequate seed stalk production and recruitment for stand maintenance. Adequate plant cover and litter exist for soil stability and nutrient cycling. An appropriate population of low sagebrush exists for the shrub component of the ecological sites. Under this alternative, current livestock management

would be expected to continue making progress towards meeting Standards for Rangeland Health and LUP objectives.

4.1.4.2. Special Status Plants

Special status plants are not presently known to occur in this allotment. Impacts to any sensitive species that may occur here cannot be determined with the information that is available.

4.1.4.3. Wildlife/Special Status Animals

Under this alternative livestock grazing would continue at the discretion of the permittee and is expected to maintain habitat that is adequate to meet the needs of most wildlife and special status animals. However, if grazing were to be concentrated during the active growing season, deteriorating habitat conditions would likely result. This could include a loss of plant vigor and production resulting in less cover, structure and forage for wildlife and increased levels of localized disturbance of wildlife habitats and populations.

4.1.4.4. Riparian/Aquatic Resources

No riparian areas or springs are on BLM land in this allotment.

4.1.4.5. Water Quality

No riparian areas or springs are on BLM land in this allotment.

4.1.4.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, could be positive and watershed health would improve. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate.

4.1.4.7. Cultural Resources

This alternative has potential to improve overall ecological condition and preserve the integrity of cultural resources. However, it could adversely affect cultural resources in some unfenced riparian zones and springs because cattle tend to concentrate and trample the ground in these areas, resulting in loss of integrity on cultural resource sites. The direct impact of livestock to cultural resources is possible artifact breakage and movement that livestock could create with grazing, trailing, and trampling. Indirect impacts of grazing on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.1.4.8. Visual Resource Management

There would be no effect to visual resource values.

4.1.4.9. Recreation

There would be no effect to recreation.

4.1.5. Johnstone (0618)

4.1.5.1. Upland Vegetation

Under this alternative of a fall season of use (as in accordance with reported actual use), this allotment would be expected to continue making progress towards meeting Standards for Rangeland Health in native plant communities. If grazing were to occur at the current use levels and season of use (9/01-10/31), after the critical growth periods for perennial grasses, recruitment, health and vigor of perennial grasses would be expected to increase. Under this proposed action, progress towards meeting Standards for Rangeland Health and LUP objectives would be expected to continue.

4.1.5.2. Special Status Plants

There are no known special status plant populations on public land in this allotment.

4.1.5.3. Wildlife/Special Status Animals

Under this alternative, grazing would continue to occur at the discretion of the permittee with grazing expected to continue to occur from September through November. The current condition of riparian habitat in the allotment has not been determined, however late summer and early fall grazing is generally not conducive to the improvement of riparian habitat. It is reasonable to assume that habitat is in less-than-satisfactory condition for the large diversity of dependant wildlife and special status animals that occur along accessible reaches of 0.5 miles of Coyote Creek within this allotment and that it would remain that way under this alternative. This could include a lack of adequate cover, forage and habitat structure resulting from concentrated livestock grazing and trampling. Annual deferred grazing should allow for the continued improvement of upland habitat conditions by allowing vegetation to complete growth and seed production prior to grazing and would avoid physical disturbance of habitats and populations during the critical nesting/breeding season. However, annual late summer and fall use could result in periodic excessive use of palatable shrubs that could reduce important late summer/fall forage for deer and elk and the long term deterioration of this shrub component that provides forage and cover for a diversity of wildlife species. Since grazing could technically occur at any time of year under this alternative, impacts to wildlife and special status species habitats could differ significantly depending upon when grazing actually does occur.

4.1.5.4. Riparian/Aquatic Resources

Annual hot season grazing from September into October can have negative impacts to riparian resources from heavy utilization, shrub browse and streambank alteration. Riparian condition of Coyote Creek on public land is unknown at this time and under the proposed action, the condition is not expected to change, as season of use would remain the same. Hot season grazing can result in reduced vegetative cover and regeneration, increased erosion along the stream banks, decreased vigor of vegetation and declines in overall riparian health, depending on utilization levels. Grazing later in the season, October or November, would have less overall impacts on the riparian area, as long as utilization of willows is within standards, and the condition of the stream would likely improve. Streambanks are generally drier and less susceptible to livestock alteration later in the season making them less likely to erode.

Depending on livestock movement, riparian areas would not be utilized as heavily later in the season. Residual vegetation remaining along the stream would be greater, enabling the stream to withstand flows and improve. Monitoring the allotment on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous plant community. There are no springs on public land in the allotment.

4.1.5.5. Water Quality

Improvement in water quality would depend on livestock movement and timing in the allotment. Water quality would improve if use occurs after the hot season when livestock are less likely to congregate on the stream. Stream banks would be more stable and less likely to erode, decreasing sediment input into the stream. Riparian vegetation would improve, with later use, resulting in increased cover and density and therefore a decrease of solar heating of the stream. This would lower stream temperatures and, combined with reductions in sediment input, would improve overall water quality, including aquatic habitat for macro invertebrates.

4.1.5.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, could be positive and watershed health could improve under the Proposed Action. Livestock would graze the pasture after the key grass species have met their phenological growth needs. This would allow the key forage species to increase in vigor, potential seed production, and possible reestablishment thereby improving the vegetative component as it relates to watershed health. The proposed system could aid in making progress towards healing these processes where they are evident. Much of this is dependent on utilization levels and livestock movement. It must be realized that under any improved grazing system, positive changes to watershed characteristics and progress in terms of watershed /rangeland health would take time and is dependent on other attributes and not just grazing. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate.

Watershed impairing effects of western juniper invasion would continue. Where key forage species are allowed to meet their phenological growth needs these plants can better compete with juniper for moisture and nutrients thereby offsetting some of the negative impacts associated with juniper invasion.

4.1.5.7. Cultural Resources

Under the proposed action, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.1.5.8. Visual Resource Management

There would be no direct or indirect effects to visual resource values.

4.1.5.9. Recreation

There would be no direct or indirect effects to recreation.

4.1.6. Staples (0610)

4.1.6.1. Upland Vegetation

Under this alternative, native plant communities would continue to be maintained. Basin big sagebrush with an understory of bluebunch wheatgrass is the dominant plant community within this allotment. Vigor, reproduction, and health of decreaser and increaser grasses were evident and adequate for stand maintenance. Although invasive grasses such as cheatgrass and medusahead wildrye are scattered throughout the allotment, current grazing management has proven to be appropriate for perennial grass maintenance and improvement. Expansion of these invasive grass species would not be expected under this alternative. Under the proposed action, livestock management would be expected to continue making progress towards meeting Standards for Rangeland Health and LUP objectives.

4.1.6.2. Special Status Plants

Special status plants are not known to occur in this allotment. Impacts on any species that may occur here cannot be determined with the information that is available.

4.1.6.3. Wildlife/Special Status Animals

Under this alternative, grazing would continue to occur at the discretion of the permittee, and would be expected to continue to provide adequate habitat for most wildlife and special status animals. However, this scenario could result in deteriorating habitat conditions if the permittee decides to concentrate grazing use during the active growing season. This would result in the loss of plant vigor and production resulting in reduced cover and forage for wildlife and increased levels of disturbance of wildlife habitats and populations.

4.1.6.4. Riparian/Aquatic Resources

No riparian areas or springs are on public land in this allotment.

4.1.6.5. Water Quality

No riparian areas or springs are on public land in this allotment.

4.1.6.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, could be positive and watershed health would improve. This allotment is currently meeting the standards for watershed health. Therefore, under this proposed action, it would be expected to continue to be maintained. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate.

4.1.6.7. Cultural Resources

Under the proposed action, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where

use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.1.6.8. Visual Resource Management

There would be no effect on visual resource values.

4.1.6.9. Recreation

There would be no effect on recreation.

4.2 Direct and Indirect Impacts of Alternative 1 - Four-Pasture Rest Rotation and Prescribed Fire (Common Use)

4.2.1. Indian Creek (0649), Stone (0650), Howl Creek (0655), Johnstone (0618), Staples (0610)

Environmental consequences to resources would be the same as under the proposed action alternative.

4.2.2. Indian Meadows (0520)

4.2.2.1. Upland Vegetation

This alternative would implement a four-pasture rest rotation grazing system. Environmental consequences under this alternative would be expected to be similar to those associated with the proposed action for Indian Meadows, with slight differences possible.

Under this alternative, a true deferred grazing rotation would occur in the Noon Creek pasture #4 (along with a year of rest every fourth year). Critical season grazing (6/1-7/15) would only occur during the fourth year. True summer grazing would only occur during year two followed by a year of rest. Under this grazing system, upland vegetation would be expected to respond similarly to vegetative responses under the proposed action. However, riparian areas would be expected to benefit more under this alternative than under the proposed action, due to the rest.

This alternative would benefit the upland vegetation in the Williams Creek area (referred to as the Lookout Pasture under this alternative) the most, when compared to other alternatives presented in this EA, because livestock grazing would occur 1 out of 4 years while grasses were actively growing. Under this alternative, a true deferred rest rotation grazing system would be implemented. In year 1, the pasture would be rested, years 2 and 5, grazing would occur in late summer/fall; and in year 3, grazing would occur during the critical growth period of perennial grasses. Under this alternative, perennial grasses would be expected to quickly improve in health and vigor and recruitment of decreaser grasses would be expected to occur and improve. With the elimination of late July and early/mid August grazing (generally the hottest season in this area), livestock distribution under these prescribed use periods would be expected to improve,

further decreasing livestock concentrating in shady areas and riparian zones.

Environmental consequences of projects would be the same as under the proposed action alternative.

4.2.2.2. Special Status Plants

This alternative would have nearly the same impact on the four phacelia populations that occur in the Indian Meadows pasture, but it is expected to be slightly better than the proposed action. Use would occur during the critical period for least phacelia only one year in four, instead of two years in five as under alternative one. As under the proposed action, the long-term persistence of these populations would more likely be secured. Impacts from prescribed fire would be the same as under the proposed action.

4.2.2.3. Wildlife/Special Status Animals

Under this alternative, the reduced frequency and duration of hot season grazing and incorporation of periodic rest treatments should result in the gradual improvement of riparian habitats in Pastures 1 and 4. However, some hot season use would continue to occur in three out of four years and is likely to limit the rate and extent of habitat recovery for dependant wildlife. The indefinite exclusion of most of Current Creek in Pasture 4, followed by only very limited grazing, should result in the rapid improvement of both riparian and upland habitat within this riparian pasture. Two out of four years of deferred grazing along with one year of complete rest should result in rapid improvement of upland habitats by allowing herbaceous vegetation to complete active growth and produce seed prior to grazing in most years. This system would also limit physical disturbance of habitats and populations and loss of cover and forage during the critical nesting/breeding season to only one year out of four.

The impacts of proposed juniper management would be the same as described for the proposed action.

The construction of 3.5 miles of new pasture fence, reconstruction of 8.0 miles of existing boundary fence and 3.5 miles of exclosure fence would result in some short-term disturbance to wildlife during construction. Minor long-term impediments to movement of big game, long-term increases in wildlife mortality from collisions and entanglement, and deterioration of habitat in the immediate vicinity of the fence would result. However, these impacts would be largely offset by the removal of 2.0 miles of existing exclosure fence and the long-term improvement of wildlife and special status species habitat that would be derived from improved livestock management and exclusion.

4.2.2.4. Riparian/Aquatic Resources

A reduction in the frequency and duration of hot season grazing in Pasture 4 would result in improved riparian health similar to the Proposed Action. For Pasture 1, the rotations are very similar for three of the years, but this alternative provides rest, which would likely allow the riparian areas to recover more quickly in Pasture 1 than the Proposed Action. Both pastures would have three years of rest during the ten-year permit.

Fencing most of Current Creek and excluding livestock grazing until the stream has recovered would result in immediate improvement of riparian health. The grazing rotation would allow the other streams in the pasture to improve, especially by limiting hot season grazing to three weeks and by incorporating one year of rest in four. Limiting livestock grazing would allow streams to develop and maintain a healthy riparian plant community dominated by late-seral riparian species with good cover and density. Stream channels would improve over the long term as they narrow, deepen and stabilize. This would also result in improved aquatic habitat conditions as channel form improves, fine sediment levels decrease, and stream shading increases. Density and diversity of late-seral riparian species would improve on stream segments that are currently in properly functioning condition due to lower livestock use of riparian vegetation. Portions of North Fork Owyhee River are in properly functioning condition and would be expected to continue to function properly with the change of grazing use. The non-functioning segment of Noon Creek would improve slowly, but would still be making progress towards meeting the standard of proper functioning condition.

Monitoring the streams on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous riparian plant community.

4.2.2.5. Water Quality

Water quality would improve similar to the Proposed Action. With the development of dense and vigorous riparian plant communities dominated by riparian shrubs, channel form would improve (deeper and narrower channels) and riparian shade would increase. Both would result in cooler water temperatures by reducing the amount of solar energy input into streams. Additionally, the development of vigorous riparian plant communities would stabilize streambanks and channels, resulting in lower levels of fine sediment from eroding, unstable banks. Aquatic habitat would improve for aquatic species and macro invertebrates. Limiting the grazing would reduce the numbers and concentrations of fecal coliform and *E. coli*. Over the long-term, streams on the allotment would fully support beneficial uses and comply with State of Idaho water quality standards, particularly Noon Creek, which is a 303d listed stream. Improvements in water quality of these streams would result in improvements downstream. Monitoring the allotment on a periodic basis would allow BLM to make management adjustments, if necessary, to maintain a healthy and vigorous plant community.

4.2.2.6. Air Quality

Environmental consequences would be the same as under the proposed action alternative.

4.2.2.7. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would be positive and watershed health would improve, especially with anticipated progress in the health of riparian systems. All pastures, which are currently not fully meeting the Standards for Rangeland Health, could show progress towards meeting those standards. Currently, in portions of the allotment where livestock use is limited, standards are being met. Under this alternative, livestock would be grazed in a rotational system that includes rest and deferred grazing. This system could aid in making progress towards healing these processes where they are evident. It must be realized that under any improved grazing system,

positive changes to the watershed characteristics and making progress in terms of watershed/rangeland health would take time and is dependent on other attributes and not just grazing. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate.

4.2.2.8. Cultural Resources

Environmental consequences would be the same as under the proposed action alternative.

4.2.2.9. Visual Resource Management

Environmental consequences would be the same as under the proposed action alternative.

4.2.2.10. Recreation

Environmental consequences would be the same as under the proposed action alternative.

4.2.2.11. Wilderness Study Areas

Environmental consequences would be the same as under the proposed action alternative.

4.3 Direct and Indirect Impacts of Alternative 2 – Present Situation

4.3.1. Indian Creek (0649)

4.3.1.1. Upland Vegetation

Under this alternative, herbaceous vegetation would be expected to continue to be healthy and vigorous. However, of continued concern would be the degree of livestock browse use on bitterbrush (*Purshia tridentata*), and natural encroachment of western juniper. Under the current season of use with late summer grazing after herbaceous vegetation has cured out and seed heads have shattered, bitterbrush would continue to serve as the most palatable source of forage available to livestock during the late summer and fall. Furthermore, the current season of use would continue to decrease herbaceous residual vegetation amounts, decreasing the chance for natural wildfire events. If livestock grazing were occasionally deferred until after seed ripe or occurred in the early spring with summer rest, amounts of residual vegetation available to burn and carry wildfire into the juniper canopies should increase.

4.3.1.2. Special Status Plants

Special status plants are not presently known to occur in this allotment. It is expected that any sensitive riparian plants that may occur here would continue to be adversely impacted by hot season use.

4.3.1.3. Wildlife/Special Status Animals

Under this alternative, the continuation of annual late spring through fall grazing would maintain riparian habitats in unsatisfactory condition for the large majority of dependant wildlife and special status animals. The continuation of annual late summer and fall grazing is also likely to result in the continued excessive utilization and poor vigor of bitterbrush leading to less and less browse availability for deer and elk and cover for a diversity of other species. The unchecked

encroachment of western juniper would also continue to contribute to unsatisfactory habitat conditions for many species primarily by out-competing and suppressing sagebrush and other shrubs.

4.3.1.4. Riparian/Aquatic Resources

With the continuation of current livestock grazing, Bogus Creek would remain in functioning-at-risk condition. Grazing during the hot season would result in utilization of riparian vegetation too great to allow the development of the dense, vigorous riparian plant communities needed to stabilize streambanks and channels. Additionally, continued hot season grazing by livestock would result in bank alteration from livestock shearing, and trampling of streambank vegetation. Diversity and density of late-seral riparian species would be less than that under Alternative 3, and less than that of the proposed action. Degraded conditions could allow invasion of riparian/wetland corridors by noxious weed species, which may further impact the condition of the streambanks as well as vegetative diversity.

4.3.1.5. Water Quality

Water quality would remain in the same condition under this alternative. Continued annual hot season grazing on Bogus Creek would not allow the development of vigorous, late-seral riparian plant communities on the stream. These types of plant communities are necessary to stabilize the stream banks and promote the formation of a healthy stream channel and to reduce fine sediment levels. Without the development of late-seral plant communities dominated by willows and other riparian shrubs, levels of stream shading would continue to be inadequate to prevent solar heating of streams. All of these factors would continue to reduce the potential for macro invertebrates and other aquatic life.

4.3.1.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would continue where they are occurring and watershed health would be impaired in these areas. The watershed health standard is currently being met in most of this allotment. Under the current grazing system, little betterment would be expected considering the ecological condition of the area. In portions of this allotment, where livestock use is limited and juniper/shrub encroachment is minimal, these standards are being better met. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate. Many of the erosional features that have been documented in these allotments (pedestalling, as an example) have developed over many tens of years and under older grazing management systems. The current systems do not appear to be making progress towards healing these processes where they are evident.

4.3.1.7. Cultural Resources

Under this alternative, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.3.1.8. Visual Resource Management

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring in areas of heavy livestock utilization.

4.3.1.9. Recreation

Impacts to recreation that are currently occurring due to livestock grazing would continue to occur. Recreational use levels would likely continue to incrementally increase, which is the trend throughout the area.

4.3.2. Indian Meadows (0520)

4.3.2.1. Upland Vegetation

Pasture 1

Under this alternative, pasture 1 would continue to not make progress towards meeting the watershed standards for Rangeland Health. Livestock grazing would continue to occur annually from 6/01-10/31 at current levels. Plant communities would continue to be dominated by mountain shrubs and mountain big sagebrush. Interspatial areas would continue to be dominated by increaser grasses such as Sandberg bluegrass with decreaser grasses found mostly under the protective cover of shrubs and in low abundance. The health and vigor of native perennial bunchgrasses would not be expected to improve with current livestock grazing management. Livestock would continue to graze throughout the critical growth periods of perennial grasses year after year. As discussed in the assessment, perennial grasses on public lands within pasture 1 of the allotment, have not received rest during the critical growth periods from livestock since before 1986. Without incorporating some kind of a grazing rotation where herbaceous vegetation received either rest or deferment from livestock grazing, progress towards meeting Standards for Rangeland Health and LUP objectives would not be expected to occur.

Pasture 2

Under this alternative, pasture 2 would continue to not make progress towards meeting Standards for Rangeland Health. Livestock grazing would continue to occur annually from 6/1-10/31 at the current exchange of use level of 30%. Plant communities would continue to be dominated by mountain shrubs and western juniper, and the herbaceous component would continue to be depleted through poor health and vigor. Recruitment of decreaser bunchgrasses would continue to be minimal or absent in the areas of heavier livestock utilization. Annually, this pasture would continue to be grazed during the critical growth periods for increaser and decreaser grasses. Furthermore, it is well documented that since implementing a deferred rotation with pasture 3 in 2000, the grazing permittee has yet to successfully remove livestock in pasture 2 after July 15. With few exceptions, livestock have been found in pasture 2 after July 15, and quite often through October during grazing use supervision checks since calendar year 2000. The current grazing rotation has proven to be an inadequate grazing management system for meeting Standards for Rangeland Health, other resource management objectives, and requirements such as the court ordered riparian stubble heights at the end of each growing season.

4.3.2.2. Special Status Plants

Trampling impacts to least phacelia from livestock during the active growth phase and prior to seed dispersal (May-July) are adverse, particularly for this annual species. It is expected that repeated, annual trampling during this time, as under this alternative, would eventually deplete the local seed bank and extirpate a site. Soil compaction may also be adverse. In 2002, only one plant was found at the four known locations, at Noon Creek Spring. All of the sites were extremely trampled by livestock, which were present in the area. The long-term persistence of this plant in pasture 2 is clearly at risk under the present management.

4.3.2.3. Wildlife/Special Status Animals

The continuation of annual hot season grazing within all three pastures in this allotment would continue to maintain the vast majority of riparian habitat for dependant wildlife and special status animals in unsatisfactory condition and is likely to result additional habitat degradation. The continuation of annual growing season use in pastures 1 and 2 is also likely to maintain upland habitats in less than satisfactory condition for most species by continuing to limit the occurrence of desirable grasses that provide important food and cover for ground nesting and foraging species. The continued unchecked encroachment of western juniper would also continue to contribute to unsatisfactory habitat conditions for sagebrush steppe species while increasing habitat for woodland species.

4.3.2.4. Riparian/Aquatic Resources

Under this alternative, streams in the allotment would continue to be impacted by livestock grazing. Non-functioning stream reaches would continue to erode and riparian health would not recover on these streams. Functioning-at-risk stream segments would remain at risk for further degradation. Grazing during the hot season would result in utilization of riparian vegetation too great to allow the development of the dense, vigorous riparian plant communities needed to stabilize streambanks and channels. Additionally, continued hot season grazing by livestock would result in bank alteration from livestock shearing, and trampling of streambank vegetation. Degraded conditions may allow invasion of riparian/wetland corridors by noxious weed species that may further impact the condition of the streambanks as well as vegetative diversity. Stream reaches in good condition, the North Fork Owyhee River, would continue to function properly.

4.3.2.5. Water Quality

Maintaining the current grazing practices would not allow streams to meet water quality standards. This alternative would allow continued bank shearing and channel compaction, which coupled with runoff events, would result in excessive runoff and fine sediment, increased turbidity, increased sediment as surface fines and increased water temperature. Continued annual hot season grazing would not allow the development of vigorous, late-seral riparian plant communities on the streams. These types of plant communities are necessary to stabilize the stream banks, to promote the formation of a healthy stream channel, and to reduce fine sediment levels. Without the development of late-seral plant communities dominated by willows and other riparian shrubs, levels of stream shading would continue to be inadequate to prevent solar heating of streams. Bank alteration would continue to occur, causing sediment to be delivered to the streams. All of these factors would continue to reduce the potential for macro invertebrates and other aquatic life. Beneficial uses on Noon Creek would not be met under this alternative.

4.3.2.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would continue where they are occurring and watershed health would be impaired in these areas. The allotment would not make significant progress towards meeting the Standards for Rangeland Health where there currently are problems. In portions of this allotment, where livestock use is limited, these standards are being better met.

Under the existing grazing system, pasture 1 is not meeting the standard and pasture 2 is minimally meeting the standard. Much of this is related to the yearly early season use in these pastures and the livestock distribution pattern. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate. Many of the erosional features that have been documented in these allotments (pedestalling, as an example) have developed over many tens of years and under older grazing management systems. The current system is not appearing to be making progress towards healing these processes where they are evident.

Watershed impairing effects due to western juniper and shrub dominance, combined with the current utilization of the key forage species during their critical phenological periods, would continue to have long lasting negative impacts on the plant community in general.

4.3.2.7. Cultural Resources

Under this alternative, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.3.2.8. Visual Resource Management

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring in areas of heavy livestock utilization.

4.3.2.9. Recreation

Impacts to recreation that are currently occurring due to livestock grazing would continue to occur, including impacts within the North Fork Owyhee River suitable wild river corridor. Recreational use levels would likely continue to incrementally increase, which is the trend throughout the area.

4.3.2.10. Wilderness Study Areas

The wilderness values of naturalness and outstanding scenic quality in the North Fork Owyhee WSA would continue to be negatively affected in areas of the wilderness study area that receive heavy livestock utilization.

4.3.3. Stone (0650)

4.3.3.1. Upland Vegetation

Under this alternative, with a late summer and fall season of use (in accordance with some years of reported actual use), this allotment would be expected to make progress towards meeting Standards for Rangeland Health. If grazing were to occur at the current use levels and season of use (8/01-10/31) after the critical growth periods for perennial grasses, recruitment, health and vigor of perennial grasses would be expected to increase. Although cheatgrass currently exists in areas of the allotment, this grazing prescription would be expected to increase perennial grass density and frequency, and in return, keep cheatgrass populations in check. However, if grazing continued in accordance with the current season of use specified on the grazing permit (6/01-10/15), progress towards meeting Standards and LUP objectives would not be expected to occur. Grazing, year after year, during the critical growth periods of the perennial grasses would not allow for recruitment of the minimal decreaser grasses present. Furthermore, health and vigor of increaser and decreaser grasses would not improve. Current observed erosive soil conditions would also continue without an increase in residual herbaceous litter after the growing season. If perennial grasses are not given the opportunity to improve in condition, density, and numbers, the potential for further cheatgrass expansion exists. Under the current grazing permit (6/01-10/15), progress towards meeting Standards for Rangeland Health and LUP objectives would not be expected to occur.

4.3.3.2. Special Status Plants

Special status plants are not presently known to occur in this allotment. Impacts from current management on any sensitive plants that may occur here cannot be determined.

4.3.3.3. Wildlife/Special Status Animals

Although the assessed riparian habitat in this allotment was rated in proper functioning condition, utilization of both herbaceous and woody riparian vegetation was heavy to severe in 2001 and the continuation of annual hot season grazing is likely to result in continued excessive levels of use that could result in declining habitat conditions for many dependant wildlife species. Continued excessive levels of livestock use would also result in an unacceptable amount of annual riparian vegetation production that would be available as forage and cover for wildlife. The continuation of annual growing season use in this allotment is likely to maintain upland habitats in less than satisfactory condition for most species by continuing to limit the occurrence of desirable grasses that provide important food and cover for ground nesting and foraging species. The continued unchecked encroachment of western juniper would continue to contribute to unsatisfactory and declining habitat conditions for sagebrush steppe species while increasing habitat for woodland species.

4.3.3.4. Riparian/Aquatic Resources

South Boulder Creek is in proper functioning condition overall on this allotment, however utilization of riparian herbaceous and woody vegetation has been heavy in areas accessible to livestock in the past. With a longer season of use, livestock would utilize accessible areas heavier than under the Proposed Action. Overall, due to the inaccessibility of most of the stream, South Boulder Creek would remain in proper functioning condition.

4.3.3.5. Water Quality

Water quality would remain in the same condition under this alternative. Water temperatures in South Boulder Creek on the allotment exceed the Idaho State criteria for cold-water biota. However, this may be due to upper watershed effects. In livestock accessible areas, the long hot season grazing would not allow the development of vigorous, late-seral riparian plant communities on the streams. Utilization would be heavier than under the Proposed Alternative where livestock access the stream, and more fecal coliform, and *E. coli* would be introduced to the stream. Bank alteration would continue, causing sediment to be delivered to the streams. All of these factors would continue to impact water quality and reduce the potential for macro invertebrates and other aquatic life.

4.3.3.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would continue where they are occurring and watershed health would be impaired in these areas. The allotment would not make significant progress towards meeting the Standards for Rangeland Health where there currently are problems. In portions of this allotment, where livestock use is limited, these standards are being better met.

Under the existing management system, this allotment is not meeting the standard. Much of this is related to the yearly early season use in the area and the livestock distribution pattern. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate. Many of the erosional features that have been documented in these allotments, such as pedestalling, have developed over many years and under older grazing management systems. The current system does not appear to be making progress towards healing these processes where they are evident.

Watershed impairing effects due to western juniper and shrub invasion, combined with the current grazing systems utilization of the key forage species during their critical phenological periods, would continue to have long lasting negative impacts on the plant community in general.

4.3.3.7. Cultural Resources

Under this alternative, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.3.3.8. Visual Resource Management

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring in areas of heavy livestock utilization.

4.3.3.9. Recreation

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring in areas of heavy livestock utilization.

4.3.4. Howl Creek (0655)

4.3.4.1. Upland Vegetation

Under this alternative, current livestock management would maintain native plant communities. Idaho fescue and bluebunch wheatgrass would continue to dominate the understory and interspatial areas along with Sandberg bluegrass. During the rangeland health evaluation, it was observed that the site was highly productive, with a diverse age structure, and adequate seed stalk production and recruitment for stand maintenance. Adequate plant cover and litter exist for soil stability and nutrient cycling. An appropriate population of low sagebrush exists for the shrub component of the ecological sites. Under this alternative, current livestock management would be expected to continue making progress towards meeting Standards for Rangeland Health and LUP objectives.

4.3.4.2. Special Status Plants

Special status plants are not presently known to occur in this allotment. Impacts from current management on any sensitive plants that may occur here cannot be determined.

4.3.4.3. Wildlife/ Special Status Species

Under this alternative, habitat is expected to remain in generally satisfactory condition and should continue to meet the needs of most wildlife and special status animal species.

4.3.4.4. Riparian/Aquatic Resources

No riparian areas or springs on public land in this allotment.

4.3.4.5. Water Quality

No riparian areas or springs on public land in this allotment.

4.3.4.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would continue where they are occurring. The watershed health standard is currently being met in most of this allotment. Under the current system, little betterment would be expected considering the ecological condition of the area. In portions of this allotment, where livestock use is limited and juniper/shrub encroachment is minimal, these standards are being better met. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate. Many of the erosional features that have been documented in these allotments, such as pedestalling have developed over many tens of years and under older grazing management systems.

4.3.4.7. Cultural Resources

Under this alternative, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.3.4.8. Visual Resource Management

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring.

4.3.4.9. Recreation

Impacts to recreation that are currently occurring due to livestock grazing would continue to occur. Recreational use levels would likely continue to incrementally increase, which is the trend throughout the area.

4.3.5. Johnstone (0618)

4.3.5.1. Upland Vegetation

Under this alternative, with a fall season of use (in accordance with some years of reported actual use), this allotment would be expected to continue making progress towards meeting Standards for Rangeland Health. If grazing were to occur at the current use levels and season of use (9/01-10/31), after the critical growth periods for perennial grasses, recruitment, health and vigor of perennial grasses would be expected to increase. Under the current grazing permit progress towards meeting Standards for Rangeland Health and Land Use Plan objectives would be expected to occur.

4.3.5.2. Special Status Plants

There are no known special status plant populations to occur on BLM land in this allotment.

4.3.5.3. Wildlife/Special Status Animals

Although there is currently a lack of desirable herbaceous vegetation in this allotment, a continuation of the current late summer/fall grazing strategy should theoretically result in an upward trend in habitat conditions for most wildlife and special status animal species since use is being deferred until after the active growth period. This grazing strategy also avoids livestock disturbance of wildlife during the critical breeding/nesting season.

4.3.5.4. Riparian/Aquatic Resources

A continuation of the current late summer/fall grazing strategy should result in maintenance of the riparian areas since use is being deferred until after most of the hot season. This allows riparian vegetation a growing season without livestock use. Streambank soils generally are dryer during this season and less susceptible to livestock alteration. However, livestock use during late fall may shift to willow species which may impact regeneration and vigor of willows.

4.3.5.5. Water Quality

A continuation of the current late summer/fall grazing strategy should result in maintenance of the water quality since use is being deferred until after most of the hot season and the condition of riparian area on Coyote Creek would remain the same. This type of deferment allows the riparian vegetation a growing season without livestock use. Streambank soils are generally dryer and less susceptible to alteration resulting in reduced fine sediment delivery to the stream.

However, if livestock use exceeds the objectives on willow species, this would prevent the development of late-seral riparian community needed to shade the stream to promote cooler water temperatures.

4.3.5.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would continue where they are occurring and watershed health would be impaired in these areas. The allotment would not make significant progress towards meeting the Standards for Rangeland Health where there currently are problems. In portions of this allotment, where livestock use is limited, these standards are being better met.

Under the existing management system the on-going erosional processes and watershed concerns would continue where they have been occurring. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate. Many of the erosional features that have been documented in these allotments (pedestalling, as an example) have developed over many tens of years and under older grazing management systems. The current systems do not appear to be making progress towards healing these processes where they are evident.

Watershed impairing effects due to western juniper and shrub invasion, combined with the current grazing systems utilization of the key forage species during their critical phenological periods, would continue to have long lasting negative impacts on the plant community in general.

4.3.5.7. Cultural Resources

Under this alternative, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.3.5.8. Visual Resource Management

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring.

4.3.5.9. Recreation

Impacts to recreation that are currently occurring due to livestock grazing would continue to occur. Recreational use levels would likely continue to incrementally increase, which is the trend throughout the area.

4.3.6. Staples (0610)

4.3.6.1. Upland Vegetation

Under this alternative of current livestock management, native plant communities are being

maintained. Basin big sagebrush with an understory of bluebunch wheatgrass is the dominant plant community within this allotment. Vigor, reproduction, and health of decreaser and increaser grasses are evident and adequate for stand maintenance. Although invasive grasses such as cheatgrass and medusahead wildrye are scattered throughout the allotment, current grazing management has proven to be appropriate for perennial grass maintenance and improvement. Expansion of these invasive grass species would not be expected under this alternative. Current livestock management would be expected to continue making progress towards meeting Standards for Rangeland Health and LUP objectives.

4.3.6.2. Special Status Plants

Special status plants are not presently known to occur in this allotment. Impacts from current management on any species that may occur here cannot be determined.

4.3.6.3. Wildlife/Special Status Animals

Under this alternative, habitat is expected to remain in generally satisfactory condition and should continue to meet the needs of most wildlife and special status animal species. However, grazing use in this allotment has been at the discretion of the permittee and this level of flexibility could result in a change in livestock management that could lead to the deterioration of habitat conditions and/or unacceptable levels of use and/or disturbance during the breeding/nesting or other critical periods.

4.3.6.4. Riparian/Aquatic Resources

No riparian areas or springs are on public land in this allotment.

4.3.6.5. Water Quality

No riparian areas or springs are on public land in this allotment.

4.3.6.6. Soils

Overall impacts to the watershed/soil resource, being closely tied to the vegetative community and soil surface stability, would continue where they are occurring. The watershed health standard is currently being met in most of this allotment. Under the current system, little improvement would be expected considering the ecological condition of the area. In portions of this allotment, where livestock use is limited and juniper/shrub encroachment is minimal, these standards are being better met. Mechanical impacts to the soil surface from livestock hoof action would continue where livestock tend to congregate. Many of the erosional features that have been documented in these allotments (pedestalling, as an example) have developed over many tens of years and under older grazing management systems.

4.3.6.7. Cultural Resources

Under this alternative, the impacts to cultural resources would continue and potentially cause adverse effects. The mechanical disturbance to the soils by livestock hoof action where use is heavy would continue to affect the integrity of cultural resources. The direct impact of livestock on cultural resources would be breakage and movement. Indirect impacts of livestock on cultural resources would be continued erosion of archaeological sites from grazing and trampling resulting in loss of site context.

4.3.6.8. Visual Resource Management

Renewal of the present grazing system would continue the impacts to scenic quality that are currently occurring.

4.3.6.9. Recreation

Impacts to recreation that are currently occurring due to livestock grazing would continue to occur. Recreational use levels would likely continue to incrementally increase, which is the trend throughout the area.

4.4 Direct and Indirect Impacts of Alternative 3 – No Grazing

4.4.1. All Allotments

4.4.1.1. Upland Vegetation

This alternative would be expected to have positive impacts to areas of the Indian Meadows Area that currently have diverse and healthy plant communities. In these areas, plants would complete their annual growth cycles without any livestock grazing during the critical growth period, or removal of biomass and residual plant matter. Herbaceous vegetation in the interspaces of mountain shrubs and juniper would increase in health and vigor, and accumulate biomass. In areas where the shrub component is excessively thick, the herbaceous understory would eventually be eliminated due to the heavy competition for vital resources. The shrub canopy would intercept effective sunlight and the understory would be unable to photosynthesize sufficiently to propagate.

The No Grazing Alternative would eliminate impacts of livestock grazing, and impacts associated with the construction and maintenance of new and existing range development projects. Aspects of livestock grazing that negatively affect other users would be eliminated. No prescribed burning would occur. Juniper would continue to expand on the allotment, competing with the shrubs, grasses and forbs for light and water. As the juniper canopy closes, the fine fuels and ground cover would decrease, making the areas increasingly more fire resistant. Eventually it would cross a threshold into a closed juniper community with a sparse, shade-tolerant understory, resulting in the loss of wildlife habitat and the other values associated with diverse plant communities.

There would be a negative economic impact to the permittees that graze livestock in the allotments and to the local ranching community. However, there could be a positive economic impact to the local communities if the area became more valuable for non-consumptive uses, such as private and commercial recreation.

4.4.1.2. Special Status Plants

This alternative would benefit the populations of least phacelia that occur pasture 2 of the Indian Meadows allotment. Adverse impacts, such as trampling and habitat alteration, would be eliminated. This alternative would benefit any other populations of special status plants that may occur in this allotment. The risk of adverse impacts would be eliminated.

4.4.1.3. Wildlife/Special Status Animals

This alternative would have a positive impact on most wildlife and special status animal species. The lack of livestock grazing would result in dramatic increases in available forage and cover and eliminate trampling and other physical disturbance associated with livestock grazing. This would be especially true within and adjacent to riparian areas where livestock use is generally most concentrated and would likely result in increased habitat productivity and carrying capacity that would lead to increased species diversity and population numbers. However, most shrubs and associated understory grasses and forbs would gradually increase in abundance resulting in an increase in wildlife and special status species associated with sagebrush steppe, mountain shrub, aspen and other plant communities and a decrease in those more strictly associated with western juniper. In the absence of grazing, the increase in the frequency of wildfires would be such that western juniper would be less likely to reestablish and dominate deeper soil sites resulting in a long term shift to a more natural mosaic of vegetation communities that would continue to support a more diverse and abundant wildlife component.

4.4.1.4. Riparian/Aquatic Resources

Streams would improve to properly functioning condition most rapidly under the No Grazing Alternative. Over the long term, the streams would develop and maintain riparian plant communities dominated by late-seral riparian species (willows, sedges, and rushes) with greater plant species diversity, cover, and density than under the other Alternatives. Stream segments that are currently in proper functioning condition due to limited livestock access would develop riparian plant communities with greater diversity and density of plants than that under other Alternatives. Aquatic habitat for native fish species, such as redband trout, would improve over the long term as stream channels narrow and deepen, and fine sediment levels decrease due to improved streambank and channel stability. Improved channel shape in combination with increased stream shading from riparian vegetation would maintain cooler water temperatures for fish. Redband trout would particularly benefit from cooler water temperatures.

4.4.1.5. Water Quality

Water quality would improve rapidly, but decreases in fine sediment levels and stream temperatures would take place over the long term as vigorous riparian plant communities are established on streambanks. As riparian plant communities stabilize streambanks and channels, the stream channels would narrow and deepen, decreasing the amount of solar radiation impacting the streams, resulting in reduced stream temperatures. Water quality would improve over time and would fully support beneficial use indicators and comply with State of Idaho water quality standards. Improvements in water quality of these streams would contribute to improved water quality downstream in the watershed.

4.4.1.6. Soils

Overall impacts to the soil resource, being closely tied to the vegetative health of the community and soil surface stability, would be positive in many areas and slightly positive in others where the shrub component is dominant, and watershed health would be improved. This would allow for making progress in meeting Standards for Rangeland Health in these allotments.

Under this alternative, the phenological needs of the key plant species in all pastures would be better met. By not grazing the existing perennial grass species, these plants would have an opportunity for improvements in vigor and production, and subsequently reproduction and establishment. These increases in perennial grass species and the subsequent increases in canopy cover, surface litter, above ground structural material, and fibrous root matter would aid in protecting the soil from the forces of both wind and water erosion. Site productivity would be increased. Mechanical damage to the soil surface from livestock hoof action would not occur.

Watershed impairing effects due to western juniper and shrub dominance would continue. In addition, by building up the amount of fine fuels in the understory, the possibility of natural fire playing more of a role in management of this ecological system would be enhanced.

4.4.1.7. Cultural Resources

Any direct impacts of grazing on cultural resources by livestock including trampling or breakage of artifacts would be avoided under this alternative. This alternative would also result in improvement in vegetative cover and soil stabilization over time and contribute to preservation of cultural resources

4.4.1.8. Visual Resource Management

No grazing would have a positive impact on visual resources. Improvements in vegetative condition and diversity, improvements in streambank structure and stability, and the elimination of trampling and other evidence of livestock use would enhance scenic quality. This would result in more primitive and natural landscapes.

4.4.1.9. Recreation

This alternative would have a positive impact on recreation. Improvements in scenic quality, discussed above, would have a positive effect on recreationists' experiences. Improvements in stream function and water quality would eventually lead to improved opportunities for fishing. Improvements in wildlife habitat would lead to increased opportunities for both consumptive and non-consumptive wildlife-related recreation. Reduction or elimination of livestock-related impacts would make previously undesirable areas attractive to recreationists for camping. Improvements in scenic quality, recreational opportunities, and wildlife habitat would also enhance the wild and scenic river values of the North Fork of the Owyhee River and the North Fork Owyhee River Wilderness Study Area.

4.4.1.10. Wilderness

This alternative would have a positive impact on wilderness. Without substantial grazing, the wilderness study area would return to more primitive and natural conditions. Scenic quality, which is one of the special features of the North Fork Owyhee River WSA, would improve as vegetative cover and diversity increases, streambank stability improves, and livestock trampling is eliminated. Habitat conditions for redband trout, another special feature of the North Fork Owyhee River WSA, would improve as livestock-related impacts to the river and riparian habitat are reduced.

4.5 Cumulative Impacts

Scope of Analysis

The areas used to assess the cumulative effects include the allotments discussed in this EA, adjoining federal grazing allotments, and the surrounding State and private lands.

4.5.1. Proposed Action

4.5.1.1. Upland Vegetation

Since the late 1930's, land management agencies in cooperation with grazing permittees have adjusted livestock grazing management practices in an effort to improve the long-term sustainability of upland resources. These practices include reductions of livestock numbers, adjustments to the grazing season, creation of individual allotments, and incorporating rest and deferment into the grazing management. Over time, some upland plant communities have benefited, but management has recently expanded their focus to improve riparian areas. Current and future grazing management practices would address both upland and riparian areas to achieve desired conditions of water quality, wildlife habitat, watershed function and vegetative communities. The improved conditions of the plant communities would have long-term benefits of sustainable multiple uses.

The permit renewal portion of the Proposed Action is the most recent modification to grazing practices. Additional changes may occur in the future if desired changes to plant communities, watershed function, wildlife habitat and water quality do not occur. Since the Proposed Action does not alter the total amount or season of permitted use, it would not alter existing land uses on associated private and leased State lands, and would not contribute to cumulative social and economic impacts.

Natural events and off-site effects of activities on surrounding federal, private and state lands would also influence the amount, rate, and direction of change in upland and riparian communities within these allotments. Juniper expansion into upland and some riparian plant communities has been documented since the 1930's. To date, BLM has taken no action to address juniper expansion on federal lands within the area, and historic and current grazing practices as well as fire suppression measures have contributed to ongoing juniper expansion. Some burning has occurred on nearby state and private lands but no recent fires have occurred near Indian Meadows Area Allotments. Acres burned by wildfire on the Owyhee Plateau have been relatively rare within the last 10 years. The proposed action incorporates improved grazing management changes and the inclusion of prescribed fire on public and State lands within the allotment. These cooperative efforts make prescribed burns more cost effective and allow the use of natural boundaries for control, rather than the use of artificial boundaries or the need for using new mechanically induced dozer lines for control. The proposed prescribed fire is among the first to be implemented under the 1999 ORMP. Potential prescribed fire for this area includes this proposed action and the West Antelope project. These prescribed fires may occur during the same year, but are not likely to occur at the same time. The ORMP has specific guidance on annual acreage limits for prescribed fire that would be adhered to.

Additional fires could be proposed as areas are assessed and acreages adjusted to account for naturally occurring fires.

4.5.1.2. Special Status Plants

Past actions such as season-long grazing (impacts: trampling, community composition change, alteration hydrological cycle, and soil compaction) and camping (impacts: soil compaction, trampling) have resulted in degraded habitats for least phacelia in the Noon Cr. pasture. The proposed action would benefit the populations on BLM land in this pasture through changing season of use and incorporating rest into the system. The exclosure fence at Indian Meadows spring would capture most, if not all, of that population, protecting it from campers and livestock. This population would still be threatened by Canada thistle proliferation, however. One other population would still be threatened by campers.

The proposed action would also benefit the two known populations of least phacelia on state and/or private land in the Williams Cr. pasture under this alternative by limiting early season use (June-July 15) to three in five years rather than every year as currently permitted. Technically, these populations have no legal status as they do not occur on public land, but overall, their improved habitat conditions contribute to the viability of the species as a whole.

Prescribed fire would have little, if any impact on this species.

Foreseeable future actions, such as grazing management changes on the surrounding areas, would benefit least phacelia by reducing or eliminating documented impacts from livestock grazing.

4.5.1.3. Wildlife/Special Status Animals

Proposed grazing management practices under this alternative are designed to limit the duration, intensity and timing of grazing on most individual pastures and allotments and should compliment similar changes in grazing management being implemented on most surrounding allotments as part of the ongoing permit renewal process. This would include limiting use in most riparian pastures during the hot season and limiting use in most pastures during the active growing season. These actions should for the most part, result in an increase in the overall quality of wildlife and special status species habitats leading to increased productivity and sustainability of regional wildlife populations. This would be tempered to some degree by the increased emphasis on spring grazing in most riparian pastures on these and surrounding allotments, which is likely to limit or preclude improvement of upland habitats and increase physical disturbance of breeding habitats and populations in these pastures. The emphasis on deferred grazing in non-riparian pastures on these and most surrounding allotments could also result in some overuse and deterioration of preferred browse plants that could limit woody forage, cover structure for big game and a diversity of other wildlife and special status animal populations in the region.

The additional miles of fence proposed under this alternative combined with numerous existing fences and those likely to be built as part of mandated permit renewals on surrounding allotments would increase the number of wildlife injuries, mortalities and impediments to big game

movements. These combined with all existing and future livestock management facilities add to the amount of degraded wildlife habitat within the immediate vicinity of these projects. However, the adverse impacts of these projects are expected to be partially or entirely offset by wildlife habitat improvements and accompanying population increases that should result from implementation of improved grazing systems and from the protection of livestock grazing impacts that enclosure fencing would provide at developed springs and some stream riparian habitats on these and surrounding allotments.

The prescribed burn within the Indian Meadows allotment along with existing proposed juniper control treatments on surrounding allotments, would result in a long-term moderate reduction in western juniper. However, on a landscape scale, it would only reduce the rate of juniper expansion. A short-term reduction in sagebrush, bitterbrush, mountain mahogany and other shrubs is likely to be accompanied by concurrent localized reductions in some dependant wildlife and special status species populations. However, most shrubs and associated understory grasses and forbs should gradually to rapidly increase in abundance and vigor resulting in a substantial increase in the quality and quantity of available habitat for a large diversity of wildlife and special status species associated with sagebrush steppe, aspen, mountain shrub and other declining plant communities in the region. These treatments are also likely to include improved habitat connectivity for migrating neotropical migratory birds, bats, big game and others and for improved dispersal and movement of animals between existing habitats and populations that have become isolated by juniper encroachment.

4.5.1.4. Riparian/Aquatic Resources

Cumulative effects to riparian resources may result from OHV use and recreation by damaging riparian plants, camping in riparian areas, and stream crossings. These effects would be localized and slight in relation to the proposed action.

4.5.1.5. Water Quality

Cumulative effects on water quality would occur due to dispersed camping, OHV use, travel on unimproved roads and the proposed action. Impacts from dispersed camping and OHV use include: increased sediment to streams, compaction of soil around campsites and roads, and damage to upland and riparian vegetation. Travel on unimproved roads would contribute sediment to streams and widen stream channels at road crossings and for a short distance away from the crossing. In relation to the proposed and past actions, the cumulative effects to water quality and riparian resources from recreation and travel would be localized and slight. Long term improvements to water quality in the streams here would result in improved water quality downstream. Water quality would be affected by activities and stream conditions in the upper watershed, above this allotment. Effects could be a change in riparian vegetation condition, due to livestock grazing, contributing to increases in sediment in the stream and increased water temperature. Management changes that improve conditions above this allotment would result in overall improved conditions in the watershed.

4.5.1.6. Air Quality

Smoke, dust, and vehicle emissions that result from the proposed action could combine with air pollutants from other projects, including prescribed and wild fires, mining activities, and/or

recreation use on adjoining State, Private, and BLM lands. Prescribed fire projects are largely driven by seasonal opportunities or requirements that often make it necessary and/or advantageous for resource managers, landowners, and users to conduct their activities simultaneously. Even though the effects of these activities are largely unforeseen, temporary, of short duration, and widely spaced over vast, complex terrain, short-term degradation of air quality could occur at localized sites from cumulative effects. Should a cumulative air shed problem be detected, immediate action would be taken to curtail this project's contribution to the problem by postponing or coordinating timing of burning operations.

4.5.1.7. Soils

Cumulative impacts to the soil resource and watershed may occur due to OHV use and prescribed fire activity. OHV use could result in vegetative damage and compositional changes (especially where invasive species are introduced via seeds transported on the vehicle), which in turn could affect watershed health. Mechanical damage to the soil surface could also occur where OHV and fire suppression vehicles disturb and track the soil or where soil compaction results from these activities. Overall, compared to the proposed and past actions, these other impacts would be more localized and of smaller extent thereby only slightly affecting the cumulative picture.

4.5.1.8. Cultural Resources

The cumulative effects on the cultural resources in the foreseeable future would be the accumulation of direct and indirect effects for each year of grazing. Future activities would be addressed on a project-by-project basis for compliance with Section 106 of the National Historic Preservation Act. Through the Section 106 process, adverse effects would be avoided or mitigated to an acceptable level of impact

4.5.1.9. Visual Resources Management

The potential exists for naturally occurring fires within this viewshed, and additional prescribed fires may be proposed for adjacent allotments. Depending on the timing and size of the fires, a large geographic area could be affected by natural and/or prescribed fires. This would have a negative effect on visual resource management over the short and mid-term, and a positive effect over the long term.

4.5.1.10. Recreation

Wildfires and prescribed fire operations in this and adjacent allotments would have a negative impact on recreation in the short and mid-term, and a positive effect on recreation in the long term. Anticipated improvements in riparian and upland conditions due to changes in grazing practices on adjacent allotments would benefit recreational opportunities in the general area. Range developments proposed in adjacent allotments would have a negative effect on recreational opportunities in the area.

4.5.1.11. Wilderness

If authorized, livestock developments proposed in wilderness study area portions of adjacent allotments would have a negative impact on the overall suitability of the North Fork Owyhee River Wilderness Study Area for designation as wilderness.

4.5.1.12. Social and Economic

Implementation of this proposed action would continue to sustain the viability of the current multiple uses in these areas. The outlook for future economic sustainability would be expected to continue without hardship to the local ranching communities.

4.5.2. Alternative 1: Four-Pasture Rest Rotation

Cumulative Impacts to resources would be similar to those discussed under the Proposed Action.

4.5.3. Alternative 2: Present Situation

4.5.3.1. Upland Vegetation

The control of juniper would come from wildfires or prescribed fires on state or private lands. Under Alternative 2, with current livestock management, upland vegetative communities would be expected to only continue to be maintained. Over time, the uplands would be expected to further cross the threshold from high elevation mountain sagebrush/bluebunch wheatgrass/Idaho fescue and mountain shrub communities to understory-depleted western juniper communities.

4.5.3.2. Special Status Plants

The cumulative impacts from season-long livestock use, noxious weed and invasive species proliferation, and camping seriously threaten all known populations in these allotments.

4.5.3.3. Wildlife/Special Status Animals

Excessive hot season grazing within these allotments is expected to continue to result in most accessible riparian habitats remaining in unsatisfactory condition. This would continue to result in reduced productivity and sustainability of regional populations of riparian dependant wildlife and special status species and reduced riparian habitat connectivity for wildlife migration and movement between adjacent habitats and populations. Similar impacts to upland habitats and regional wildlife populations would continue to occur in those allotments/pastures where annual or frequent growing season use is occurring and would continue to be exacerbated by the physical disturbance of breeding habitats and populations that results from spring grazing. Conversely, those allotments/pastures receiving mostly deferred grazing should continue to provide adequate upland herbaceous forage and cover and continue to contribute to the productivity and sustainability of regional populations of wildlife and special status animals. This would continue to be partially offset in some areas by the continued overuse of palatable browse and throughout much of the area by the continued encroachment of western juniper that is resulting in a concurrent loss of regional productivity and sustainability for many species.

4.5.3.4. Riparian/Aquatic Resources

Cumulative effects to riparian resources would result from this alternative, recreation and OHV use. Effects would include damaging and over-utilization of the riparian vegetation, streambank alteration, camping in riparian areas, and stream crossings. The combined effects would hinder

recovery of the riparian areas and damage stream channels. The degraded channels, particularly Current Creek, would continue to degrade and contribute sediment to downstream reaches.

4.5.3.5. Water Quality

With livestock grazing, recreation, and OHV activities occurring, cumulative effects to water quality would be expected. Possible impacts could include: increased sediment to streams, streambank alteration, compaction of soil around campsites and roads, and damage to upland and riparian vegetation. Water quality would continue to be degraded downstream by conditions present on this allotment. In relation to the present situation, the cumulative effects from recreation, travel and OHV use to water quality would be localized and slight.

4.5.3.6. Soils

Cumulative impacts would be similar to those discussed under the Proposed Action

4.5.3.7. Cultural Resources

Cumulative impacts would be similar to those discussed under the Proposed Action

4.5.3.8. Visual Resource Management

There are no known cumulative effects to visual resource management with this alternative.

4.5.3.9. Recreation

There are no known cumulative effects to recreation with this alternative.

4.5.3.10. Wilderness

There are no known cumulative effects to wilderness with this alternative.

4.5.3.11. Social and Economic

Overall rangeland health and vegetative production would decline in the future with the loss of the herbaceous understory and the increase in western juniper. The economic viability of grazing livestock on these public lands would be expected to diminish in the long term. Grazing permittees would be directly impacted due to poor livestock production on these lands and high cost to benefit ratios. Furthermore, it would be anticipated that local communities, which rely heavily on local ranching economics, would eventually be negatively impacted under this alternative.

4.5.4. Alternative 3: No grazing

4.5.4.1. Upland Vegetation

Juniper control would be confined to areas that experience wildfire, and have adequate fine fuels to carry the fire, or prescribed fires on state and private land. Overall, more area would convert to a juniper community and become less diverse.

4.5.4.2. Special Status Plants

The impacts to least phacelia under this alternative are similar to the proposed action, but this

alternative would further benefit all populations by eliminating trampling and soil compaction every year as opposed to two years out of five for the two populations on public land that would not be protected inside enclosures.

4.5.4.3. Wildlife/Special Status Animals

The increases in habitat quality, carrying capacity, species diversity and numbers that would be expected to result from the elimination of grazing and the increased role of fire would contribute to the productivity and sustainability of regional populations of wildlife and special status animals. Rapidly improving habitat conditions and the increasing natural role of fire are also likely to improve habitat connectivity required for migrating neotropical migratory birds, big game, bats and others and for effective dispersal and movement of animals between existing habitats and populations that have become isolated by juniper encroachment and/or degraded habitats.

4.5.4.4. Riparian/Aquatic Resources

Riparian areas and stream channels would be affected by recreation, roads and OHV use, however, cumulative effects would be slight and localized. Overall, riparian areas would improve and would offset any negative cumulative impacts.

4.5.4.5. Water Quality

Water quality would continue to be impacted by recreation, roads, and OHV use. Impacts include increased sediment to streams, channel widening, and increased stream temperatures. Effects would be slight and localized, and largely offset by improvements in riparian vegetation due to no grazing. Water quality would improve in downstream reaches, however, effects from the upper watershed would still occur.

4.5.4.6. Soils

The soil resource and watershed health would continue to be impacted by OHV use and fire suppression actions. These impacts would be localized and only slightly affect the resource. Under this alternative those impacts that result from grazing livestock would be eliminated

4.5.4.7. Cultural Resources

There are no known cumulative effects on cultural resources with this alternative.

4.5.4.8. Visual Resource Management

There are no known cumulative effects to visual resource values with this alternative.

4.5.4.9. Recreation

There are no known cumulative effects to recreation with this alternative.

4.5.4.10. Wilderness

There are no known cumulative effects to wilderness with this alternative.

4.5.4.11. Social and Economic

Under this alternative, no grazing on these public lands would have a tremendous negative, short

and long term, affect on the grazing permittees and the local economy in rural southwestern Idaho.

5. MITIGATION

Special Status Plant Species

Site-specific surveys would be conducted for special status plant species prior to implementation of all projects, including prescribed fire. In the event of discovery of resource values that might be impacted by a project, the project would be relocated or modified to such an extent that the impacts would be avoided or mitigated to an acceptable level.

Special Status Animal Species

Site-specific surveys would be conducted for rare animal species prior to implementation of all the projects. In the event of discovery of resource values that might be impacted by the project, the project would be relocated or modified to such an extent that the impacts would be avoided or mitigated to an acceptable level.

Cultural Resources

Project-specific, cultural resource inventories would be conducted prior to implementation of all projects, including but not limited to; prescribed burns and creating water bars on existing roads.

In the event of discovery of significant cultural resource values that would be impacted by a project, the project would be relocated or modified to such an extent that impacts to sites would be avoided or mitigated to an acceptable level.

Wilderness Study Areas

Within the wilderness study area, motor vehicles would not travel off designated roads as indicated on Map 1. Fence construction would primarily be accomplished on foot and horseback. The authorized officer would be notified in advance of fence construction dates so that fence construction can be monitored.

6. CONSULTATION AND COORDINATION

Throughout this Standards and Guidelines and grazing permit renewal process, interested publics, grazing permittees, other Federal agencies, and Idaho Department of State Lands have participated in one capacity or another.

In 2001, interested publics and grazing permittees were invited to participate during monitoring and collection of resource data. This included upland utilization, establishing and reading photo plots, upland rangeland health assessment fieldwork, and riparian stubble heights and evaluations.

The Draft Rangeland Health Assessment and Draft Determinations were mailed on July 26, 2002. All parties were allowed until August 12, 2002 to submit comments for preparation of the Final Assessment and Determinations. Comments were received from the following:

*Committee for Idaho's High Desert (CIHD), Katie Fite
Robert Bruce
Robert MacKenzie
Alan Johnstone
Idaho Department of Lands
Owyhee County Commissioners
Chad Gibson
Owyhee County Natural Resource Committee, Jim Desmond*

All the comments were reviewed and considered in the completion of the Final Assessment and Determinations, which were mailed on October 3, 2002. Prior to the mailing of the Final Assessment and Determinations, a field inspection of Indian Meadows Allotment (#520) occurred on August 6, 2002. Co-coordinated by Ranges West and BLM, the trip introduced Ranges West (BLM contractors) to the assessment area and the grazing allotment. Also in attendance were the grazing permittees and Chad Gibson.

Included with Assessment and Determinations mailed on October 3, 2002, was a cover letter which solicited input regarding development of grazing management which would accomplish making progress towards meeting improved rangeland health in this area. The only comments received were from CIHD (October 30, 2002) and Robert Bruce (November 15, 2002). These comments have been considered in preparation of this environmental assessment.

On November 15, 2002, Ranges West, Idaho Department of Lands, BLM, and the grazing permittees met to discuss proposed grazing management alternatives for the Indian Meadows Core Area. A coordinated grazing management proposal developed by IDL, Ranges West, and the permittees was submitted. During the meeting, slight modifications to the proposed grazing schedule were made and agreed upon by all parties including the BLM.

On January 30, 2003, BLM met with representatives from the following interest groups: Idaho Conservation League, The Sierra Club, The Wilderness Society, and The Owyhee Initiative. Discussion included the proposed BLM grazing management changes and alternatives, and prescribed fire in the North Fork Owyhee Wilderness Study Area in order to make progress towards meeting Idaho Rangeland Health Standards and achieving Owyhee Land Use Plan objectives within Indian Meadows Core Area.